

Green Thumb Newsletter

DENVER
BOTANIC
GARDENS, INC.

NO. 79-1

JANUARY, 1979

575-2547

The First Garden Calendar

John Evelyn in 1664 hit upon the idea of a month-by-month listing of the chores in a garden and the plants likely to flower in those months. A brief quote from *Kalendarium Hortense* gives the flavor of this work:

A GARD'NER'S work is never at an end; it begins with the year, and continues to the next. He prepares the ground, and then he sows it; after that he plants it, and then he gathers the fruits.

Here we endeavour to present our Gard'ners with a compleat cycle of what is requisite to be done throughout every month of the year . . .

January

Set up your traps for vermine . . . Preserve from too great and continuing rains (if they happen) snow, and frost, your choicest anemones and ranunculus . . . covering them under shelter, and striking off the snow where it lies too weighty . . .

LOBBY COURT



The snow will not "be too weighty" on our ranunculus because they will be indoors this month brightening our Lobby Court. Joining their beauty will be other portents of spring — paper white narcissus, crocus and various primulas.

Membership Dinner

"Horticulturist in Southeast Asia — An Uncommon Look at Some Common Conservatory Plants" is the title of Merle Moore's talk to be given at the Annual Membership Dinner on Wednesday, January 31st in Horticulture Hall.

Mr. Moore, who is our new Assistant Director of the Denver Botanic Gardens, spent four years in Southeast Asia — two years in Thailand and two years in South Vietnam. He and his wife traveled extensively throughout the area. His slides will include native plants that can be grown indoors and also plants of economic importance.

Please make your plans to attend for it should be a very interesting evening for you and your guests. The social hour will be from 6:00 p.m. until 7:00 p.m. Dinner will be served at 7:00 p.m.

January Classes

A wide selection of classes will be offered at the Gardens as one way to greet the New Year. You'll find some old friends, some new, but it is hoped that all members will see something of interest.

Tropical Plants of the Conservatory — January 10 - March 14 from 1-3 p.m. is part of our never ending effort to keep abreast of the requests for tours. We have a grand group of guides currently but especially with the spring demand, we need extra guides. Can you help? If so, sign up now for an interesting class and a rewarding experience. The cost is \$25.00 which is refunded if a student guides for a total of 40 hours.

As mentioned in the December Newsletter, we'd like to offer more classes for children. *Propagation* is planned to introduce fourth through sixth graders to some of the techniques used by gardeners. These skills can be useful in later life. The fee of \$4.00 includes the two sessions (January 13 and 27th from 10 - noon) and the materials needed. Limit 15.

Most of us received at least one plant for Christmas. Some may need some TLC about now. Attend Andrew Pierce's free class on *Care of Holiday Plants* on January 15 at 1 p.m., Classroom C.

Landscape Horticulture for Professionals was so popular in October that Al Rollinger and Larry Watson will offer another class on January 23 - February 27th from 7:30-9:30 p.m., Classroom C. The cost is \$60.00.

Do you know what a horticulturist is and what he does? This explanation comes courtesy of *Kinnikinnick*, the publication of the Devonian Botanic Garden.

People who are just setting out on a lifetime of gardening for fun or profit will often meet many unusual persons along the way. Among these are horticulturists, a strange breed with green thumbs, dirty hands, glazed eyes and a distressing lack of concern for trivial things like money. A beginner will often ask "How do I distinguish a horticulturist from a botanist?" Good question. This cannot be done simply by looking at the specimen. Instead one should seat the object of inquiry in front of a plant. If the specimen begins to dissect it, mutters about the xylem connected to the phloem . . . it is a botanist. If on the other hand, various colored solutions are brought out and watered into the plant, or cuttings surreptitiously taken when no one is looking, then it is a horticulturist. A good rule of thumb is that botanists cut 'em up while horticulturists pot 'em up. There are many horticulturists, some of whom actually perform useful services. The plant breeder for example. On the face of it, plant breeding might be considered a fairly safe occupation but it does have hidden dangers. One poor soul tried to cross *Ulmus* (elm) with *Acer* (maple) but ended up with *Ulcers*.

Continued back page.

GARDENING TIPS FOR JANUARY

January always seems to be a hard month to write about gardening when so many of the indoor activities have been covered in this column before, such as planning your garden for the spring, thumbing through catalogs and caring for your houseplants.

Rather than being redundant, it would seem better at this time to take a look at some of the services available to you to help you become a better gardener and solve some of your gardening problems.

You'll probably think I'm biased to begin with because I am a member of the faculty at Colorado State University and of the Cooperative Extension Service, but the University and the Extension Service is an agency that is well equipped to keep you up-to-date on gardening information and help solve day to day gardening problems.

More than any other agency, the Extension Service is the educational arm of the University and it is the responsibility of those out in the counties, sometimes called County Agents, to keep themselves up-to-date. Thus, the Extension Service is directly a continuing education off-campus facility that is easily accessible to everyone at the grass roots level.

The word, "Cooperative," when applied to the Extension Service, comes from the fact that while its headquarters are at a state-supported institution, namely Colorado State University, it is financed by three agencies; 27% by the Federal Government, 40% by the State of Colorado and 33% from local budgets, primarily counties. It is a partnership with the USDA, land grant colleges, county governments and the people themselves. It is the largest out-of-school educational system in the world.

While it was initially developed because of a need for education in agriculture and home economics in 1914, Extension has branched out into practically all disciplines and a large part of this in the State of Colorado is in horticulture. As population grows and urbanization has increased, there has been a need to keep pace with the educational needs of the gardening public in landscaping their homes, growing flowers and vegetables and the like. Parks and recreation areas have also increased, creating a greater demand for knowledgeable people to manage these facilities. This would include public Golf courses, public parks and athletic fields throughout the State.

From these demands has developed a need for trained extension specialists in horticulture throughout the State; the largest concentration of these specialists is along the front range of the Eastern slope. Colorado should almost be considered as two states when it comes to horticultural education. The Western slope which is climactically and geographically different, has different problems. Thus, it takes a trained specialist, knowledgeable in that particular area. This is a unique feature of Extension in that it provides that specialist at the local level who works with the people and their particular problems.

From the standpoint of horticulture, even the relatively recent increase in mountain home development has been partially met by Extension Agents who are familiar with the challenging gardening techniques of high mountain communities where growing seasons are often cut short or may be of less than fifty days' duration. The demand for horticulture information has increased so rapidly that Extension has been forced to a less traditional method of education and has resorted to the use of mass media.

In the past four years, the Extension Service has geared up even more by training volunteers who are called Master

Gardeners. The renewed interest in growing vegetables in the back yard has been largely responsible for the dramatic increase in requests for gardening information. Rising food prices of course are the primary reason. At the present time Colorado has approximately 185 trained volunteer Master Gardeners working in 14 counties where the demands are the greatest. Next February another forty-hour training program will be held at 4 locations on the Eastern slope and 3 on the Western slope. Those attending the course are trained to answer questions pertaining to all aspects of gardening and landscaping, but more particularly, how to work with people.

In return for the 40 hours of training the Master Gardeners volunteer 40 hours of their time working in their local county extension offices under the supervision of the county agent. They help to answer the large volume of phone calls and, depending upon interest and capability, they write press releases, information sheets, help in conducting radio and TV programs and supervise in community garden projects.

In 1978, Master Gardener volunteers contributed over 6,000 hours and it has been conservatively estimated that they saved the State more than \$112,000 in staff time alone. More important, they enabled the Extension Service to increase its own outreach into communities, providing educational support where none had existed before.

Assistance with your gardening problems is as close as your telephone. Simply call the CSU Extension office in your county. It will be listed under your county listings and is often found under state listings as well.

For more information on your County Extension Service you may wish to request a free brochure through this author at 909 York, Denver, CO 80206.

You might also wish to contact this author if you are interested in more information concerning the training sessions for the Master Gardener Program in the Denver area for the Eastern slope. For those living on the Western slope, you may contact Mr. Thomas Doherty, P.O. Box 178, Montrose, CO 81401.

-Dr. J. R. Feucht

COLORADO STATE UNIVERSITY SEEKS GARDENING VOLUNTEERS

Experienced gardeners who would like to share their knowledge with others in the community are being invited to join the Colorado State University "Master Gardener Program."

Gardeners may be of any age, sex or national background. Recruitment for volunteers is underway for persons who have experience in gardening and have time to devote a minimum of forty (40) daytime hours for public service.

Classes will be held Tuesdays, 10:00 a.m.-3:00 p.m., beginning February 6 and continuing through April 10. Please check your calendar to be sure you will be able to attend most of the classes. Location of the classes will be the Denver Botanic Garden's House at 909 York.

For applications and information, interested persons should contact their County Extension Office.

CORRECTION

Some names of the gentlemen who dug trees for the Japanese Garden were not listed correctly in a previous newsletter. We would like to thank Bob Kataoka, W. Sagara, and S. Takeshita for all their efforts on our behalf and apologize for the error.

REMINDER

Please remember to bring your old Christmas trees to the Gardens during the week of January 2-6 as requested in December's newsletter. Thank you.

DENVER BOTANIC GARDENS

CALENDAR OF EVENTS

JANUARY, 1979

H A P P Y N E W Y E A R !

2)*	1:00 p.m.	Botanic Gardens House — Dining Room	Editorial Committee Meeting
4)*	9:30 a.m.	Botanic Gardens House — Main-Dining-Kitchen	Central District Presidents Council
4)*	7:45 p.m.	Education Building — Horticulture Hall	Denver Orchid Society Meeting
6)	9:30 a.m.	Education Building — Classroom "B"	Gloxinia Gesneriad Growers Meeting
★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★			
8)*	1:00 p.m.	Botanic Gardens House — Dining Room	Associates Board Meeting
8)	7:00 p.m.	Education Building — Classroom "A"	Center for Biological Self Sufficiency
9)	9:30 a.m.	Education Building — Classroom "B"	Civic Garden Club — Division "C"
9)*	Noon	Education Building — Herbarium	Herbarium Committee Meeting
9)*	4:00 p.m.	Botanic Gardens House — Dining Room	Executive Committee Meeting
9)	7:30 p.m.	Education Building — Classroom "A"	Rocky Mountain Succulent Society Meeting
10)*	9:00 a.m.	Botanic Gardens House — Main-Dining-Kitchen	D.B.G. Guild — Herb Luncheon
10)*	1:00 p.m.	Education Building — Classroom "C"	Tropical Plants of the Conservatory — Mrs. P. Hayward
11)*	2:45 p.m.	Botanic Gardens House — Dining Room	Education Committee Meeting
13)	1:30 p.m.	Education Building — Classroom "C"	Film: Darwin And The Galapagos
★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★			
15)*	1:00 p.m.	Education Building — Classroom "C"	Care of Holiday Plants — Mr. Andrew Pierce
16)	12:30 p.m.	Botanic Gardens House — Main Room	Rocky Mountain African Violet Council
16)	7:30 p.m.	Education Building — Horticulture Hall	Sierra Club Meeting
16)*	7:30 p.m.	Education Building — Classroom "A"	Denver Audubon Society Meeting
17)*	1:00 p.m.	Education Building — Classroom "C"	Tropical Plants of the Conservatory
18)	7:30 p.m.	Education Building — Classroom "B"	Indoor Light Gardening Society Meeting
19)	7:30 p.m.	Education Building — Classroom "C"	Denver Botany Club Meeting
20)*	9:00 a.m.	Education Building — Classroom "B"	Hi-Country Judge's Workshop
20)	1:00 p.m.	Education Building — Horticulture Hall	Denver Audubon Society Meeting
★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★			
22)	9:30 a.m.	Botanic Gardens House — Main Room	Ultra Violet Club Meeting
22)	7:30 p.m.	Education Building — Classroom "B"	The Nature Conservancy Meeting
23)*	Noon	Education Building — Classroom "B"	Adult Education — Board Meeting
23)*	Noon	Education Building — Herbarium	Herbarium Committee Meeting
23)*	4:00 p.m.	Botanic Gardens House — Main Room	Board of Trustees Meeting
23)	7:30 p.m.	Education Building — Classroom "A"	Colorado Gladiolus Society
23)*	7:30 p.m.	Education Building — Classroom "C"	Landscape Horticulture Class for Professionals — Mr. Alan Rollinger & Mr. Larry Watson
24)*	Noon	Botanic Gardens House — Dining Room	Colorado Garden Show, Inc.
24)*	1:00 p.m.	Education Building — Classroom "C"	Tropical Plants of the Conservatory — Mrs. P. Hayward
25)*	4:00 p.m.	Botanic Gardens House — Dining Room	Horticultural Advisory Committee
25)*	7:30 p.m.	Education Building — Horticulture Hall	Slide Show of New Zealand
25)*	7:30 p.m.	Botanic Gardens House — Main-Dining-Kitchen	Denver Men's Garden Club Meeting

CALENDAR OF EVENTS FOR JANUARY (Continued)

26)*	9:45 a.m.	Education Building — Horticulture Hall	Ikebana International Workshop
27)*	9:00 a.m.	Education Building — Classroom "B"	"Spice Up Your Life" — Mrs. Eileen Price
28)	2:00 p.m.	Education Building — Classroom "C"	Colorado Cactophiles Meeting
★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★			
29)*	9:00 a.m.	Education Building — Classroom "C"	Advanced Arrangements Using Fresh and Dried Plant Materials — Mrs. Avalonne Kosanke
30)*	10:00 a.m.	Education Building — Classroom "C"	Slide Show for Guides
30)*	7:30 p.m.	Education Building — Classroom "C"	Landscape Horticulture Class for Professionals — Mr. Alan Rollinger & Mr. Larry Watson
31)*	1:00 p.m.	Education Building — Classroom "C"	Tropical Plants of the Conservatory — Mrs. P. Hayward
31)*	7:00 p.m.	Education Building — Horticulture Hall	Annual Membership Dinner
★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★			

FEBRUARY

1)*	7:45 p.m.	Education Building — Horticulture Hall	Denver Orchid Society Meeting
2)*	11:00 a.m.	Botanic Gardens House — Main-Dining-Kitchen	Civic Garden Club Meeting
3)	9:30 a.m.	Education Building — Classroom "B"	Gloxinia Gesneriad Growers

**For Members or Enrollees Only*

January						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

February						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			



Greetings from the Director

As the New Year, 1979, opens before us I should like to present as my greeting to all those who have in any way contributed to a most successful year for the Denver Botanic Gardens in 1978, and to those who will also be working with us in 1979, the following quotation which is reprinted from *American Forests* (Dec., 1978, Vol. 84, No. 12), the magazine of the American Forestry Association.

God of life, source for the renewal of all who live, plant us in a healthy environment that we may be shielded from harm and nurtured to grow. Remind us of our deep roots which reach backward to primeval soil, downward to everflowing springs of refreshment, and which stretch outward into an amazing network of mutual support with other living beings. Make us aware of the unseen realities of your grace which change dirt into pulsing cells, which feed us and hold us up.

God of justice, grant us the integrity of the oak, that with straight grain and resilient strength we may stand against adversity. May we as persons exhibit the wondrous capacities of the bark of a tree, to have distinctive identities and to cover our wounds with healing growth. With increasing maturity, may we extend to heights beyond our present reach. With transforming power, help us turn both sunshine and rain into the substance of life.

God of hope, drive us to set buds against winter storms and let them explode into blossom and leaf by the warming trends of your presence. By the beauty and fragrance of lives turned inside out, may those who pass by take notice and be gladdened. Invite those who are tired to rest in the shade of overarching branches and let the frantic bird take shelter on a limb and learn again to sing. Keep us firm to resist the errant forces that would push us over but not so brittle that we are unable to sway with the fresh breezes of morning and change.

God of the ages, some autumn evening in time to come, let our leaves sail in the wind to cover the earth and plant our seeds in quiet, hidden places where someday they too may explode with the mystery and the beauty of new life.

God of all, like the trees of the forest, may we make our peace with nature and live in harmony with one another in human community, with the marvelous understanding that we are your children and you are "Our Father, who art in heaven . . ."

—Allen Happe

It seems to me that there could hardly be a more appropriate statement of the philosophy of life of those who love plants deeply and work with them in any way. Furthermore, it provides lofty guidelines for all of us for the months to come. I hope you find it as meaningful as I have.

William G. Gambill, Jr.
Director

Note: The lines quoted above are used in the *Green Thumb Newsletter* with the expressed permission of the Rev. Allen Happe, who is senior minister of the First Church Congregationalist in Cambridge, Mass. Founded in 1636, the church is one of the very oldest in continuous service in this country. Prof. Asa Gray, world-renowned botanist at Harvard University, was an active member of First Church. He planted two yellow-wood trees (*Cladrastis lutea* of the Legume Family) over one hundred years ago in front of the church. They are now enormous in size and are still thriving, according to Rev. Happe.



Members will be saddened to learn of the recent death of Dr. E. H. Brunquist. Though his professional commitment had been to the discipline of human physiology as a professor at the University of Colorado Medical School, his hobby had always been the study of botany. He served as the Curator of Botany at the Natural History Museum, was a founder of the Denver Botany Club, but may be most vividly remembered by his many friends at the Denver Botanic Gardens as the leader of our monthly field trips. These included much more than learning the genus and species of the plants for Dr. Brunquist had a definite philosophy about man's relationship with nature. He believed that there was a partnership between living and non-living matter. Thinking as he did that all things are in a process of constant change, we will remember him in complete harmony with the natural processes.

We'll meet you at the end of the trail, Dr. B!

TRIBUTES

In memory of Myrtle Krummel

Mr. and Mrs. Jess Gibson

In memory of Roy Lawhead

Mr. and Mrs. Jess Gibson

In memory of Lee Schwade

Lura M. Atanasoff

Solange G. Gignac

Henry M. and Mira Lee Goldstein

Joseph W. and Dinorah D. Hargadon

Ruth Hawkins

Mildred P. Horsley

Mr. and Mrs. N. W. Hyland

Martin and Sylvia Lefkowitz

Francis C. Mansfield

Lyle and Rosalyn McVay

Beverly M. Nilsen

Edward L. Robran

Mrs. Morna Jordan Smith

Brian and Marjorie J. Spillane

Deborah Stephenson

Mrs. James J. Waring

David and Lura Williams

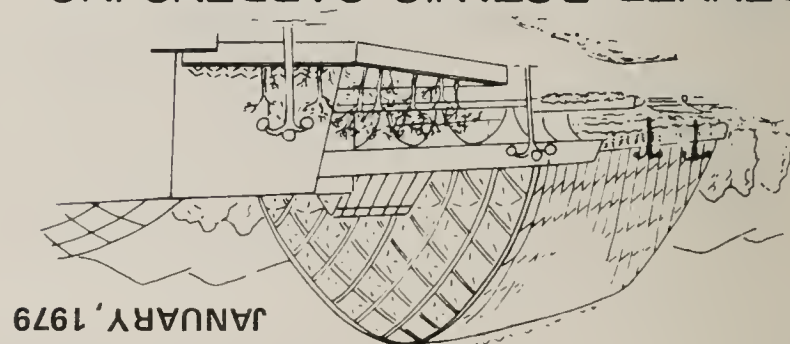
Mrs. J. Ben Williams

Mr. and Mrs. Edwin R. Wyma

Nancy Yarrington

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WINNERS ANNOUNCED!

Congratulations to the winners of the Denver Botanic Gardens first photography contest! In the category of color slides:

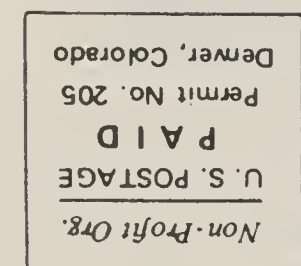
- 1st — "Flower Field" by Leslie L. Sargeant
- 2nd — "Concrete Creativity" by Esther L. Witte
- 3rd — "Symbiotica" by Nat V. Bostwick

The winners of the color prints are:

- 1st — "Plant Life" by Ron Rampolla
- 2nd — "Ferocious Flora" by William R. Thurston
- 3rd — "Colorful World of Micro-Orchidaceae" by William R. Thurston

Our grateful thanks to everyone who entered and to our judges.

Come to Horticulture Hall at 7:30 p.m. on January 25 to see a preview of our Trip to New Zealand in November 1979. Mr. Jim Holme will present slides of wild flowers and formal gardens, show a film, *New Zealand, My Kind of Country*, and will answer any questions you may have concerning the trip. All welcome.
N.B. Full details about this travel opportunity will be mailed shortly to all members.



January Classes continued.

Gilbert White in *The Natural History of Selbourne* wrote: "The productions of vegetation have had a vast influence on the commerce of nations and have been the great promoters of navigation. . . But, without the knowledge of plants and their culture, we must have been content with our hips and haws, without enjoying the delicate fruits of India and the solutiferous drugs of Peru." Learn more on this subject by attending Eileen Price's class, *Spice Up Your Life*. It will meet on January 27 from 9 - noon in Classroom B. Cost \$4.00.

Finally, anyone who has priced a dried flower arrangement knows how expensive it is. It's fun to make your own and with Mrs. Kosanke's help and advice, you can create a gift of lasting value. *Advanced Arrangements Using Fresh and Dried Material* will start on January 29th and continue every Monday until February 26, 9 a.m.-noon. Please bring containers, dried materials, needlepoint, clippers, scissors or wire cutters, wire and florists' tape. Cost \$18.50. Limit 15.

FREE FILM. January 13, 1:30 p.m., Classroom C

The film on this date, *Darwin and the Theory of Natural Selection*, will tie into the Denver Botanic Gardens' trip to the Galapagos. Even if you are not signed up for the tour, come learn how this scientist developed his theories based on his observations on these islands.

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Green Thumb Newsletter

DENVER
BOTANIC
GARDENS, INC.

NO. 79-6

JUNE, 1979

575-2547

LOST BEYOND THE LOST HORIZONS

An appropriate title for the "Beyond the Lost Horizons" tour of India-Nepal-Pakistan, 15 Mar 79 - 9 Apr 79, sponsored by the Denver Botanical Gardens. (Dates are written as they would be in the countries we visited and the hours on the 24 hour system.) Appropriate because the travel agency was informing our friends and relatives, who had called about the final flight home on a strikebound United Air Lines, that they could not reach us since they didn't know where we were. All they were sure about was that we were not where we were supposed to be, in Lahore, Pakistan.

Where were we? Marooned in Gilgit, Pakistan. The travel brochure laconically states, "Flights are sometimes delayed due to weather conditions." We had been delayed one day behind schedule as we blithely flew into Gilgit on 1 Apr 79 (April Fools Day). Our schedule had already been revised for only one day in Gilgit including a jeep trip up the new road built by the Chinese to Baltit, the capitol of Hunza.

On 2 April 79 we arose early to be at the airport at 0730. Flight cancelled due to weather conditions. On 3 Apr 79 it rained. Flight cancelled. An emergency alternative plan for a bus trip to Islamabad (a 14 hour trip) was running into red tape in spite of telephone calls to our travel agent and the U.S. Embassy. Telephone calls I might add frequently interrupted by a series of "Hello-Hello-Hello" until the connection was resumed. Weather was fine on 4 Apr 79 both in Gilgit and Islamabad but flights were cancelled. Mr. Bhutto was executed at 0200 on this day. Permission for bus travel was received but the road was blocked by landslides caused by recent rains.

The plane came in on 5 Apr 79. A most welcome sight as none of us really wanted a long bus ride with a possibility of being blocked by landslides. Our long wait had wiped out our stay in Lahore. All we saw of Pakistan after leaving Gilgit was airports closed to everyone but passengers, except for the short bus trip from Lahore to the border crossing to India. No road vehicles cross the border so we walked across — $\frac{1}{4}$ mile in Pakistan and $\frac{1}{4}$ mile in India. Porters carried our luggage across. They carry everything across including anything that might have been hauled to the border by truck. After customs we taxied to Amritsar.

There were many other interesting experiences besides the long wait in Gilgit. The "Group" AKA (also known as) "Lost Horizons Group," our identification to travel agents and hotel personnel in India-Nepal-Pakistan, got together in Heathrow Airport in London for the flight to New Delhi. We arrived at our hotel just as the sun was rising. Not the last time we would see the sun rise on this tour.

In the kaleidoscope of memories many impressions stand out and will be mentioned in somewhat chronological order.

In Delhi on 18 Mar 79 we saw Qutab Minar, the largest minaret in the world, a victory tower built by the Moslems when they conquered Delhi around 1390. We also stopped at the Indian Handicraft Emporium (set prices — no bargaining) and found out who in our group were dedicated shoppers. As on any tour, there are those who are shoppers and those who are mostly sightseers. Neither

group is ever satisfied that enough time was spent on their specialty.

Khatmandu, Nepal is remembered for the "Living Goddess," the many Hindu temples, Buddhist stupa's, being dogged every inch of the way by children selling all kinds of handicrafts, and sacred cows in the street with their dung being picked up and dried on house walls as the only source of good fuel.

Pokhara, Nepal for getting up at sunrise to see and photograph the sun hitting the tops of Annapurna, Machupuchere and other Himalayan peaks, many over 25,000 feet high. Anything less than 12,000 feet was a foothill.

A visit in the home of Mr. Shrestha, our Hindu travel agent in Nepal, was a highlight. All of us had the red dot placed on our forehead and it was explained this was to honor the god within each of us. We were given small masks of the gods and shown the large collection of wood carvings collected by Mr. Shrestha.

Tiger Tops national park was established to protect the Asiatic one-horn rhinoceros. We saw a rhino on the way in to park headquarters who was dubbed "the house rhino" because it appeared that he was hired to greet all visitors to the park. No house tigers so we didn't see the tiger. We did have a two hour elephant safari that afternoon and again the next morning and saw other rhinos.

On 24 March 1979, in a belated answer to our prayer wheel prayers at the Buddhist stupa, we were on the "Dawn Patrol" to be welcomed by Mt. Everest (Sagarmatha) and its neighboring 28,000 foot peaks.

On 26 March 1979 we left Agra by bus to fly from Delhi to Pakistan. Six of our group were late in getting to Rawalpindi so we went by minibus to Peshawar. On the trip we got acquainted with the gaily colored trucks, busses and taxis. Competition is strong and the most gaily painted vehicle expects to get the most passengers or freight. Saw fields of opium poppies on our way to the gun factory in Darra.

The next day we went to the historical Khyber Pass before going on to Swat. One cannot help but feel the past as we went through the pass to within 2 miles of the Afghanistan border. You can see the route of Alexander the Great in 300 B.C. Akbar's grandfather's path in the 1500's is plainly visible. British insignia painted on the stones showed they were here too.

In Amritsar the most moving experience to many of us was the putting to bed of the Holy Book of the Sikhs at 2200. It was carried from the Golden Temple in the middle of the lake across a causeway to its resting place until 0300 in the morning. Every Sikh at the ceremony went out of his way to tell us what was going on.

The last and most pleasant experience was Srinagar, Kashmir, India. The Shalimar gardens were visited but we were disappointed because it was too early in the spring for the full glory of the gardens. The houseboats were a shopper's paradise with everything from flowers to jewelry brought to you by shikara (small boats) across the Dal lake.

Through all the trials and tribulations everyone remained civilized. As one man put it, "There wasn't a sour apple in the bunch."

Jack Wallace

Classes

Reminder. The *Tree Walk in Boulder* has been cancelled.

The first trip in June will be the final visit Jan Wingate will pay to *Red Rocks* this season. We counted 25 species in April; come on June 5 and see how many more will be added to the list. Meet at 909 York at 12:30 p.m. or at Red Rocks at 1 p.m. at geologic marker parking lot. Cost \$1.50 plus gasoline.

"Summer's lease hath all too short a date" but take advantage of it with the trip on June 12th on the *Green Mountain Trail*. Meet at 909 York at 8 a.m. or at 9 a.m. at parking lot at the intersection of Flagstaff and Kossler Lake Roads. (Take Turnpike to Boulder, turn off at Baseline Road and follow that up Flagstaff Mountain until almost the top.) Cost \$1.50 plus gasoline. Bring lunch.

On June 13 Merle Moore will lead a tour of the outside gardens. Meet at 909 York at 9 a.m. (please park across the street in the main lot). It is hoped that people from the Rose and Iris Societies will be on hand to talk about their respective areas. No charge but please call and sign up. Limit 20.

Dr. Denham, the leader of the trip to Bonny Reservoir on June 16 and 17, has prepared the following statement:

Bonny Reservoir is in Yuma County, just west of the Kansas state line. The dam is across the South Fork of the Republican River in a sandy plains area. Just north of the reservoir is a large area of definite sand hills. Botanically, the area is quite interesting with numerous plants not found in the Foothills area around Denver.

Bonny Reservoir is a Colorado State Reservation area with level campground and flush toilets. It requires either the annual Colorado State Parks Pass (\$10.00 and valid at any state park or recreation area for the year) or a daily pass (\$2.00). Senior citizens are eligible for the Aspen Leaf Passport (Lifetime \$2.00). In addition, a \$2.00 fee is required for camping overnight.

AAA has given me the names of three motels for those who would rather make their own arrangements for spending the night at Burlington instead of camping out. These are: Best Western Chaparral Motor Inn, Sloan's Motel, and Western Motor Inn. I am sure there are other motels there also. (Burlington is 22 miles from Bonny Reservoir.)

My expectation is that we would leave the Denver Botanic Gardens shortly after 9:00 a.m. The trip is about 160 miles via U.S. 36 and about 180 miles via I-70; therefore actual driving time is just under 4 hours. Restaurants are few and far between and I think it is more fun to take picnic-type food. A stop for coffee will be made — probably at Byers. (The rest stop on I-70 just east of Deer Trail is currently closed for construction.) Saturday afternoon will be spent examining plants in the reservoir area. We should probably plan to have lunch Saturday at Bonny Reservoir about 2:00 p.m. at the campground at the northwest side of the reservoir. Sunday morning the birders will probably wish to look for birds early; and after breakfast we will spend a couple of hours continuing to look at plants near the reservoir. Midmorning we will probably drive north (through Laird) along county roads looking for more of the sand hill plants. If desired, a stop can be made at the Beecher Island monument. After a picnic lunch, we can continue to look for plants (or those who desire to get back early can return to Denver). We should be in the vicinity of Wray for lunch. (These plans are flexible — according to the wishes of the group.)

This trip will be a joint venture with the Colorado Native Plant Society so plan now to participate. No limit but please call and sign up so we may know how many to anticipate.

The walking tour of the demonstration vegetable garden is full but another is listed in the Summer Schedule.

Finally, we ask your help in reaching children, ages 8 to 12, so they may know about the nature walk on the *Enchanted Mesa* in Boulder, June 30. This walk is a memorial for Kim Sterne, a young man who was especially interested in children and plants. We will meet the children behind the Chautauqua Auditorium at 1 p.m. (take the Baseline exit from the Denver-Boulder Road and follow it west to Chautauqua). The children will be escorted on the walk by John Brett of the Gardens' staff and Bruce Andrews, a Jefferson County teacher. After the walk at 3 p.m. the Green Mountain Herb Company will provide refreshments and we hope at this time parents will join us. Since we can accommodate 30 children, do mention this opportunity to children in your acquaintance and let's have a good turn out. There is no charge but please call to sign up.



Two members of the Colorado Watercolor Society painting in the Conservatory.

Join us in helping celebrate the twenty-fifth anniversary of the founding of the Colorado Watercolor Society by attending their Annual Show in Horticulture Hall, June 22 to July 8.

Japan Today

The last event in the celebration "Japan Today" will be the dedication of the Japanese Garden at the Denver Botanic Gardens, scheduled at 2:30 p.m. on June 23rd. At this time a gift in memory of Mrs. Ella Mullen Weckbaugh, an authentic teahouse fabricated in Japan and erected with the expert assistance of Japanese workmen, will be presented. Other items in the garden include copper and stone lanterns donated by Denver's sister city Takayama, Japan and three Sengai scrolls from Idemitsu Oil Company of Tokyo. Ikebana and bonsai displays honoring the Japanese-American community of Denver will also be a part of this event.

Also on this day, Kyoko Kita will demonstrate "Ikebana: The Art of Japanese Flower Arrangement," in a Learning for Living workshop at Botanic Gardens Horticulture Hall from 10 a.m. - 2 p.m. Participants will learn by doing under Kyoko's expert supervision and after the workshop are invited to the dedication of the Japanese Garden. For further information call 629-3046.

GARDENING TIPS FOR JUNE

Effects of Cold, Wet Spring on Fruit Trees

History does repeat itself, weather history, that is. In some ways this spring was similar to last year's and also for those who keep records, that of 1972 in that we had a beautiful flowering of crabapples, redbud, plums, cherries and even forsythia and just at the peak of bloom, a cold spell with rain and snow.

Anyone who has lived in Colorado very long knows that this should be expected, but it is always a disappointment when this does occur. There were some differences with the cold spring of this year and those of 1978 and '72. Those years were dry springs; this one was wet. Last year was a much more severe cold with temperatures plunging to 18°F. on May 5 which wiped out all hope of fruit set with a few exceptions where plants were protected from such temperatures by radiant heat reflected from buildings or other protected spots.

Fruit set may be poor this year, not so much from the cold but by the fact that bee activity and the growth of pollen were interrupted at the precise time when good pollination should occur.

Research has shown that pollination is severely limited when temperatures are below 40°F., particularly if this temperature is maintained for more than a few hours. There is also a critical period of time when the stigma, that portion of the flower that receives the pollen, is receptive. Even if temperatures are appropriate, after that time, for germination, fertilization will not occur.

With apple trees, the flowers normally do not open all at once, thus you may have fewer apples this year from those that were not quite opened at the time of the wet, snowy conditions between May 2 and May 10.

In some ways this can be advantageous because crabapples open earlier and many people, while enjoying the blooms, do not enjoy the apples because of the mess they make under the trees. A critical temperature to remember when these conditions occur again, and they will, is 28°F. Below that point the flowers of most fruit trees will freeze and will not bear fruit whether pollination has occurred or not. There are, of course, exceptions and variety differences. Japanese plums, for instance, are more vulnerable than the Italian type plums such as Stanley. This is partly because the Japanese type tends to open early as with apricots and peaches.

Let's face it. Growing fruit trees in the Rocky Mountain region is always a challenge and we should expect years of low yield.

Weather-Induced Diseases

Along with the benefits of cool weather in spring are problems that you may not have seen for several years. It is likely, for instance, that we will see more disease organisms such as cedar-hawthorn rust, leaf spot diseases or blights in a variety of plants. Turf diseases such as stripe smut, rust (most common in merion lawns) and helminthosporium leaf spot are most likely to increase in incidence. Ironically, as long as soil moisture is good, the impact of these diseases is usually less. In other words, lawns under drought stress are more apt to show severe effects of these diseases than those that are not.

Stripe smut will show up in a lawn as a black striping of some of the leaf blades. Helminthosporium leaf spot will appear as purple lesions of the foliage. Both of these diseases can be controlled using Tersan 1991. In addition, leaf spot diseases can be readily controlled with common lawn fungicides such as Fore and Daconil 2787. There are not satisfactory controls for rust but since this disease attacks the tips of the leaf blades, it can be mowed off and if the lawn is allowed to dry up a bit the disease should not reoccur.

Increased Insect Activity

There have been high hopes that insect activity would be limited by the cold winter and also the cold, wet spring. While these conditions may have reduced the activity of some, unfortunately, it appears now that some of our more serious pests will be just as bad this year as last. The cold weather seems to have had little effect on the elm leaf beetle, an insect that spends the winter as an adult. It was simply driven into more protected areas. The freezing weather in early May probably had only a delaying action on most insects.

Now would be a good time to check your elms and look for signs of the beetle laying its eggs on the lower sides of the leaves. The eggs are yellow and are more or less football-shaped, layed in clusters. Pesticides containing carbaryl (Sevin) should be applied when the eggs appear. By now, you may also find the tiny caterpillars that hatch these eggs. They can quickly skeletonize the leaves. The same chemicals will control them. Season-long control is also possible using a chemical called Furadan. This is a systemic applied in the soil but because of its toxicity, should not be used in the root zone of edible crops. It should be applied by a licensed pesticide applicator.

Dr. J. R. Feucht



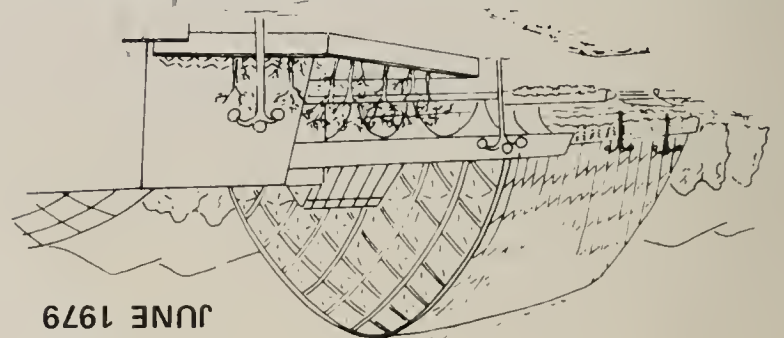
Arbor Day tree planting in honor of Lisa McDowell, Past President of the Civic Garden Club.

Thanks are due to all who worked so hard to make Plant Sale the success it was. People were delighted with the variety of plants available and were most appreciative of the friendly, helpful volunteers. Special thanks to all who heeded the plea for adding machines; the cashiers' lines were much improved thanks to you and your donations. Book Sale too was an outstanding success. More of you than ever before gave us items to sell and then turned right around and bought someone else's treasures.

Thanks too to Phyllis Dill who booked the guides' tours this past year. It is a big job to dovetail requests and volunteers but all worked very smoothly. The summer schedule shows guided tours at 10 a.m. Tuesday, Wednesday and Thursday in July and August (and already July is almost full).

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Special Note:

News has been received that **Noonday**, Channel 4's TV news show, will originate from the Denver Botanic Gardens on June 11. Don Ritterbush, a landscape architect and garden consultant, will handle the horticulture portion of the show and Maurice Jones will emcee. Plan now to tune us in.

DENVER BONSAI CLUB ANNUAL EXHIBITION

Many of the finest Bonsai in the Rocky Mountain area will be on display in the exhibition hall at the Denver Botanic Garden on June 9 and 10, 1979 from 9:30 a.m. to 4:30 p.m. The show will feature approximately one hundred fifty beautiful Bonsai, some with estimated ages of over one hundred years. There will be live demonstrations at 10:30 a.m., 12 noon, 1:30 p.m. and 3 p.m. each day on creating and culture of these miniature trees. Donation \$1.00 for adults.

Any questions concerning the exhibition can be directed to Keith Jeppson/Show Chairman, 629-2263 or 429-6519.

Tributes

In memory of E. Fraser Bishop

Mrs. J. C. Rheem

In memory of Mrs. Elizabeth Wellborn Holland

The Garden Club of Denver

In memory of Mrs. T. E. McClintock

Mrs. J. Churchill Owen

In memory of Kim Sterne

Mr. and Mrs. John Almendinger

Mr. and Mrs. Charles G. Boughton

Mr. and Mrs. Wendell A. Johnson

In memory of Mrs. Madeline Turner

Marion P. A. Miller

Welcome

It is with pleasure that the Board of Trustees announces that Mr. Robert H. Dodge has been selected as the Director of Development. He has a fine background with experience in fund-raising, public relations and general development and will be an asset to the staff.

Celebrate the Year of the Rose!

"The Year of the Rose — Love, Friendship, Peace" will be the theme of the 1979 rose show. The Denver Rose Society and the Arapahoe County Rose Society will join together in a tribute to the rose on Father's Day, June 17, 1979. Open to public at noon.

If you have any questions about exhibiting your roses or would like to have a show schedule, please contact Mrs. Linda Brown at 795-3080. We will make every effort to help.

IRIS SHOW

Region Twenty of the American Iris Society

presents

THE MELODIES OF SPRING

Horticulture Hall — Denver Botanic Gardens
1005 York Street

Saturday June 2 - 1:00 p.m. to 4:45 p.m.

Sunday June 3 — 10:00 a.m. to 4:45 p.m.

The public is invited without admission charge to view the show iris and/or enter horticultural stalks and/or arrangements.

Those wishing to enter stalks and/or arrangements can obtain schedules by calling either of the show co-chairpersons: Julianne Merritt, 798-4227 or Ray Lyons, 985-7030.

While at the Iris Show take this opportunity to visit with some of the Society members. They are experts on these plants and as time permits will be glad to answer your questions or take you outside to the Iris beds.

Slide Show

A special treat is scheduled on June 9 at 1:30 p.m., Classroom C, when Lu Long will show slides to illustrate "The Discoveries of Edwin James." Free and all welcome.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$15.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 575-2547.



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Green Thumb Newsletter

DENVER
BOTANIC
GARDENS, INC.

NO. 79-7

JULY, 1979

575-2547



MINIATURE ROSE TEST GARDEN

It has taken two years of consulting, planning and correspondence by the Denver Rose Society, Denver Botanic Gardens and the American Rose Society but now, Denver Botanic Gardens has been selected as the fifth test site in the United States for miniature roses. The Chairman of the Miniature Test Garden Committee visited the possible test garden area, met with DBG Administrative Staff and then polled the committee for its recommendation to the ARS Board of Directors. On April 20, 1979 the Board of Directors of ARS voted to approve this garden location.

The other test sites are in Louisiana, Ohio, California and Oregon. With DBG testing miniature roses, our arid-alkaline conditions will begin bringing valuable input into the overall results. Our winter conditions with cold temperatures alternating with warm ones, bright sunlight and inadequate snow cover should certainly test the miniature roses for hardiness.

Due to the problem of having the individual hybridizers provide three bushes of each variety being tested for each test site, Denver may be the last site to be selected by the ARS. The miniature roses are to be grown under normal growing conditions and are evaluated once each week during the blooming season. Each variety is tested for a two year period. Roses which receive a certain number of points on a scale of 100 will be presented an Award of Excellence. Those roses good enough to be introduced commercially will be added to the miniature roses already planted in the rose garden.

Denver Botanic Gardens will begin making the new test garden this summer and will be ready to receive the first test plants in the spring of 1980. With this garden, the horticulture scope of Denver Botanic Gardens is further expanded.

Joan Franson

FOR YOUR INFORMATION

Rocky Mountain Horticulture, the George Kelly book, is now available again in the Gift Shop. Many other items there also are worthy of your consideration. Have you seen the spool candlesticks? These are among the last of the wooden spools once found in spinning mills throughout New England. Each spool is made of beech, maple or other hardwood, and was assembled by hand to give lasting service. These spools are not oiled or polished but the lanolin from the wool spun on them has given them the lovely finish they now have.

Tributes

"To assist in furthering your good work"
Cherry Hills Heights Garden Club

In memory of Marianne Kraft for Alpine Garden

Mrs. Kerstin Arneill
Miss Margaret Ballweg
Mrs. Christina Bauer
Mrs. Carol Bishop
Ms. Arlene Bobrow
Mr. Joseph Bronesky
Ms. Marilyn Brown
Mr. Hugh Burns
Mrs. Patricia Burrows
Mr. William Cantwell
Miss Jan Charls
Mr. James B. Daley
Mrs. Edith Danes
Mrs. Judith Dunn
Mr. & Mrs. William Dunne
Miss Donna Endres
Ms. Lyn Evans
Mr. Thomas Faxon
Mr. Phillip Figa
Mrs. Mary Flemings
Ms. Diane E. Gimber
Mr. Michael Groshek
Mrs Constance Hauver
Mr. David Johnson
Mrs. Mary Kraus
Mrs. Lorraine Lane
Mrs. Rosalie Lyke
Mrs. Mary Olson
Mrs. Pamela Powell
Mr. Arthur Seifert
Mrs. Joan Shepardson
Mrs. Mildred Shortt
Miss Teresa K. Sydney
Mrs. Jody S. Theis
Mrs. Beverly Wilson
Mrs. Anita Yowell

In memory of Alice Evans Moore

Mary Belle M. Grant
Mary P. Kugeler
Mr. and Mrs. Gilbert G. Mueller
Billie E. Stovall

In memory of Mrs. Stuart Smith

Mr. and Mrs. Gilbert G. Mueller

A.A.B.G.A.

Members will be pleased to know that plans are moving along nicely for the National Convention of the American Association of Botanical Gardens and Arboreta to be hosted by Denver Botanic Gardens this month. There are tours, rap sessions, papers and many prominent speakers who will be addressing the delegates in the general theme "Income Sources for Botanical Gardens".

If any of our members wish further information about the program, the fees, etc., please contact any one of the staff — 575-2547.

Since the August Newsletter deadline falls at the time of the convention, the deadline for that issue will be July 6th. Thank you.



July Classes

Along with Robert Herrick, we'll "sing of brooks, of blossoms, birds and bowers" for this month is devoted to field trips.

A listing follows: Mt. Goliath on July 6th and July 21st, meet at 8 a.m. at 909 York Street or 9 a.m. at Echo Lake Lodge, the cost is \$1.50 plus gasoline each trip and is limited to 20 each time, bring lunch; a weekend trip to Steamboat Springs is scheduled for July 7-8, meet at 8:30 a.m. at the Post Office in Steamboat, no charge but please call and sign up (If you wish to car pool from the Denver area please call Dr. Schwendinger 758-6871 to see if anything can be arranged); field trip to Red Rock Lake, July 13, meet at 7:30 a.m. at 909 York or at Red Rock Lake at 9:30 a.m. (Go to Boulder, take 119 west to Nederland, turn north to Ward on 72 and then go west out of Ward for about 3 miles on the Brainard Lake Road.), cost \$1.50 plus gasoline, bring lunch, limit 30; Mary Edwards will lead her trip on July 18th leaving 909 York at 9 a.m., all welcome, bring lunch, no charge, share gasoline expenses.

Two classes are scheduled in July also. *Summer Lawn Care* will be discussed by Marlo Meakins at 9:30 a.m., Classroom C, July 18. Free, no limit.

Avalonne Kosanke has been asked repeatedly to teach a flower arranging class when fresh flowers are plentiful. Here is your chance! *Arranging Lessons Using Fresh Flowers* will meet on three Monday mornings starting on July 30 and continuing through August 13, 9:30 - 12 noon, Classroom B. Please bring two containers, two needlepoint holders, clippers, scissors or knife, wire, floral tape and floral clay. Plant material will be provided. Fee \$10.00 for members, \$12.50 for non-members. Limit 15.

So much interest was expressed after the June Newsletter was received that we'd like to list the names of the lucky people who were on the Beyond the Lost Horizons Tour:

Mr. and Mrs. Richard Ball, Sun City, AZ
 Mrs. Morley C. Ballantine, Durango
 Mrs. Charla Cannon, Denver
 Mrs. George Cutting, Ft. Lauderdale, FL
 Mr. and Mrs. Frank Freyer, Denver
 Dr. William Gambill, Denver
 Mrs. William Donovan George, Boulder
 Elvia V. Gauss, Denver
 Mr. and Mrs. E. Atwill Gilman, Englewood
 Mrs. Dorothy Knop, Sun City, AZ
 Elizabeth B. Labrot, Denver
 Mr. and Mrs. Claude Maer, Jr., Denver
 Mrs. Carl McGuire, Boulder
 Mr. and Mrs. John Mitchell, Denver
 Dorothy Pettis, Manhattan, KS
 Mrs. Edwin Pionkowski, China Grove, NC
 Mr. and Mrs. George Robinson, Denver
 Mr. and Mrs. Ray Samuel, New Orleans, LA
 Mrs. A. D. Talmage, Denver
 Mr. Jack Wallace, Aurora
 Mr. Mark Visnak, Denver

18th Annual Terrace and Garden Tour Thursday, July 26, 9:30 — 5 p.m.

There are eight unique, exciting gardens chosen for this year's tour with special emphasis on care and maintenance by their owners. Refreshments will once again be served at a lovely house with a shaded patio surrounded with charming pots filled with flowers. One garden has a waterfall created by rocks the owners transported themselves from the mountains, which was quite a feat. The surrounding plant material also comes from the mountains.

Please note the time change this year and don't miss any of the gardens on the tour.

Tickets may be purchased from the Botanic Gardens Gift Shop, from Guild members, or at the first garden on the tour. Cost \$5.00.



Come See the Day Lilies

Day lilies are an interesting perennial with a romantic history. Some of the common orange ones were brought from the orient in the days of the clipper ships. They escaped from gardens in New England and made themselves at home along the roadways of the U.S.

Because of the efforts of the hybridizers, the new varieties are much more beautiful. They are easy to grow, relatively insect and disease free and have a profusion of bloom.

In an effort to spread the word about this most useful perennial, members of the American Hemerocallis Society will be stationed in the Hemerocallis garden on July 14, 21 and 28 from 10 a.m. until noon. Come take this opportunity to meet the experts and to see the very latest varieties in bloom.

The Denver Orchid Society in cooperation with the Southwest Regional Orchid Growers Association will host an Intermountain Continuing Education Workshop on July 14th and 15th at the Denver Botanic Gardens, Horticulture Hall. Registration will start at 8 a.m. Saturday. Advance registration before June 30 will be \$12.50 per person, or will cost \$15.00 at the door. This fee includes a box lunch. Sunday there will be a Greenhouse Tour and Garden Party.

Eric Hagsater and Federico Halbinger from the Asociacion Mexicana de Orquideologia A.C. have been invited to speak on Mexican species, climates and growing conditions. Federico will also lecture on *Barkeria* and *Odontoglossums* and Eric will explore his favorite topic of *Epidendrums*. In addition, Professor Joseph Ardeti of the University of California will give a very interesting two-screen presentation on Nomenclature and a spicy little program on "Sex and the Single Orchid."

There will be a banquet with door prizes at the Landmark Hotel on Saturday evening for \$10.00 per person.

For additional information contact Mrs. Donnalee Strutz at 433-4542 (evenings) or for registration information, Ms. Pat Frazier at 757-3491 (evenings).

GARDENING TIPS FOR JULY

The cool, moist spring, while valuable in bringing about valuable moisture, has also created a considerable increase in weed growth in gardens and lawns. Control of some weeds such as dotted spurge, black medic and bindweed might be a little more difficult this year because of an EPA ban on Silvex (2,4,5,TP), a compound that was mixed with 2, 4-D and also Dicamba in many products, to help in the control of many hard-to-kill weeds.

This does not mean that control will not be impossible. Other products are still available on the market that should provide adequate control but more frequent applications may be required.

Last summer, spurge was a scourge in many lawns due to the fact that they were thinned from drought stress. With adequate moisture so far this year, spurge may not be as big a problem in lawn areas but it is likely to show up along the edges and in flower beds where there is less competition. Spurge is an annual and can be identified by the low, flat growth, small oval-shaped leaves with a purplish dot in the center. When the stem is broken a milky sap is secreted from the wounded end. Incidentally, it is related to some of our common rock garden plants and also to the poinsettia. Because it is an annual, it is probably better controlled with preemergent chemicals such as Dacthal or Treflan, the same chemicals used for crabgrass control. Spurge has already germinated but an application of a preemergent chemical following mechanical removal of the weeds will prevent further germination. This weed seems to germinate almost continually all summer.

Black medic, another low-growing plant that resembles a yellow flowering clover, is very difficult to control but repeated treatment with a broadleaf weed killer containing 2, 4-D and Dicamba should help to eliminate this weed.

Probably the most difficult weed to control is bindweed. In a lawn area that is maintained in good health, bindweed is not usually a big problem and the regular broadleaf weed killers will keep it in check, though probably will never eliminate it altogether. In flower beds and shrub borders it is much more difficult and care must be used in applying weed killers to avoid damage to your valuable plants. Cultivating to remove bindweed simply propagates it. Spot treatment with Amitrol T has been found fairly effective. It is slow to kill and usually does not result in total control.

More recently, a Monsanto product known as Round-Up has been developed and shown to be quite effective in bindweed and weedy grass control. It is a non-selective chemical and therefore, must be applied with care. Unfortunately, it is still not readily available for home use and is extremely expensive. Hopefully this product will be cleared by the EPA and made available in small-package form in the near future. I've found it to be highly successful in control of quackgrass in flower beds and shrub borders. Applied with care, it can also be used as a chemical edger along fences, rock gardens and hedges. The good thing about this product is that it doesn't sterilize the soil. Thus, a treated area can be planted within seven days after use.

When using Round-Up as an edger in controlling grasses, I've found that once the grass turns brown, it is best left in place, cutting it short to make it look better. The remaining dead sod prevents or reduces an invasion of weeds.

Insects in the Vegetable Garden

This is the time of year to look out for various insects in the vegetable garden. One of the most devastating is the Mexican bean beetle which can reproduce quickly and

cause considerable damage to your bean crop. The larval stage does most of the damage and can be found on the lower side of the leaves. This stage of the beetle is yellowish-orange in color and quite spiny. It skeletonizes the leaves much like the elm leaf beetle skeletonizes elm leaves.

Another insect that can cause a lot of damage is the cabbage looper. This green worm has a voracious appetite. It takes only a few to do considerable damage to a head of cabbage. Both these insects are readily controlled with Carbaryl (Sevin).

Perhaps the most difficult insect to control in vegetable gardens is the leaf miner found in spinach, Swiss chard and beets. I've found that the best method is to pick all the older leaves. These are the ones that are the most severely affected. In many cases, the mined portion can be easily removed to make them edible. Following removal of the old leaves, spray with Diazinon. A two-week waiting period is necessary before further harvest.

Fire Blight

Again this year fire blight seems to be a very serious problem. It was probably accentuated by the freeze injury that occurred in early May since this was an additional source of infection. Unfortunately, there is really no satisfactory control of fire blight, only a cosmetic approach.

Seriously infected branches should be pruned out making the cut at least a foot beyond any visible discoloration of the bark. Make sure that the cut is made at a crotch, leaving no stub because stubs will provide additional entry for the disease. Pruning equipment, as well as the pruning wounds, should be swabbed with alcohol to reduce further spread.

Another method is to make sure aphids and other sucking-type insects are kept controlled. Aphids, leaf hoppers and similar insects can spread the disease throughout the summer. Agri-Strep sprays have also been recommended but this bactericide is apparently not very effective except when applied during the blooming stage.

Dr. J. R. Feucht

This touching tribute was written in memory of a former member of the Gardens:

As spring comes on, I am reminded with nagging bitter-sweet memories of my loved one, who loved to garden.

He would bring the first little crocus that bloomed, sharing with me its fresh beauty. So would begin the first of many offerings. I was privileged to receive the first blossoms or fruits of the garden — a daffodil, a tulip, later a rose, a handful of berries, an ear of corn, or a tomato. No one that I have ever known enjoyed so much a single bloom or fruit of the vine. He would talk about the color or uniqueness of that particular sample of nature. Then he would set it up to be admired. When we were young, it was not a dozen roses from the florist that I received, it was a single stalk of very special gladiolus he had grown.

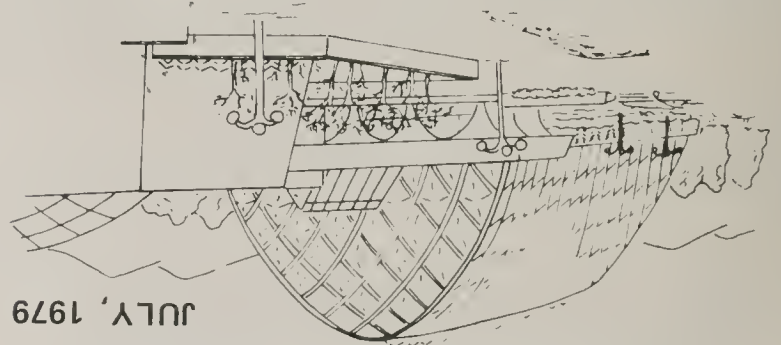
On many an occasion I was invited to accompany him to see a new wonder in the garden.

I do not mean that he was the greatest of gardeners. Many neighboring gardens were finer or more carefully groomed. And he had his share of disappointments with pests, hail, and his own shortcomings. But he had a love that was not easily put down. He often told of an aunt who gave him some pansy plants in a grape basket when he was a little boy. Perhaps that was the beginning

(Continued on back page)

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JULY, 1979

THE FRAGRANCE GARDEN

The wide variety of fragrances in plants has delighted and intrigued people for centuries. In recognition of the considerable pleasure which all people, but especially the blind, derive from aromatic plants a member of the DBG's Board of Trustees has given a gift designated specifically for the establishment of a fragrance garden.

Herb Schaal, the landscape architect, envisions the garden as a small intimate area with sides high enough to hold in the scent. Pockets of different temperature will be created by making use of north versus south exposures and shade trees. The planting scheme will be carefully considered since some species volatilize their oils only in direct sun while others require cool conditions.

Aromatic flowers, herbs, shrubs and trees will be utilized as well as plants with interesting leaf shapes and textures. The flower beds will be raised waist high next to the path, thorny species like roses will be placed towards the back, and tape recorded information will be available.

To supply varying sounds and textures underfoot the path may be composed of different materials such as sand, wood chips, rock or gravel. As the trail rises gently from the level of the pool there will be changing views of the Conservatory buildings and grounds and the fountain will be heard more distinctly. Additional sounds, such as the rustle of aspen leaves or the dry clattering of pods on a golden rain tree, will be supplied by the plants themselves.

The fragrance garden or perhaps more appropriately, the sensory garden, will be a very pleasant addition to the DBG grounds, hopefully by 1982.

Janet Mount

(Editor's note: Janet Mount is a graduate of the University of Colorado and has served as an intern at the gardens this summer.)

Slide Show

Dr. Richard Schwendinger, the leader of the trip to Steamboat Springs, will compare the wild flowers of the East with those of the West at a slide show entitled "Wild Flowers of Western Pennsylvania". This is scheduled on July 14, 1:30 p.m., Classroom C. Free and all welcome.

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of his interest. All of his life he loved to share his flowers and garden produce. He liked to talk about gardening, often over the fence with neighbors, often with garden club members. Exchanging ideas and experiences was as important as trading plants.

Like other gardeners, he studied his gardening magazines. There was also a stack by his chair. Early in the season he poured over the catalogs and planned and sent his order. Garden centers, too, held a great attraction.

He appreciated the miracle of seeds. Often there were seeds, pods, or nuts to be found in his pockets. Or they might appear in drawers or envelopes in different parts of the house, car or garage. The garage was an interesting assortment of pots, tools, seeds, fertilizers, and clippings. I found a poem there, entitled "My Garden."

"I worked in my garden today
And God was there . . ."

Also a quotation of Thomas Jefferson:

"No occupation is so delightful as
the cultivation of the earth."

The garden always beckoned. Early in our marriage we had a joke that when he emptied the wastebaskets he never returned them to the house. He had to stop off and see something in the yard or start working there. That is where he loved to be.

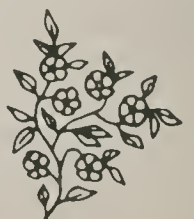
Even in his last months he was planning his garden and wanted to plant a cherry tree. And we did, and composted the garden plot.

This spring I am working in his garden alone and feeling a great sadness. And yet I feel a kind of happiness, too, when I think that surely there must be some gardens in his Heavenly Home, and that perhaps he can tend some of Nature's beautiful growing things there.

Geneva M. Ducker



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$15.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 575-2547.



Summer Serendipity



with

BILL CLARK's Solar Energy Jazz Band, on August 21st

Members of the Gardens are invited to picnic on the grass in the amphitheatre. This is a bring-your-own supper party.

Bring your picnic and your blanket.

At 7:30 p.m. the jazz band will entertain under the stars in the outdoor amphitheatre (Horticulture Hall if inclement weather). Admittance will be by membership card or this newsletter.

Gardening Tips for August

Thinking about winter doesn't seem like a timely activity now, yet for the trees and shrubs in your yard, it is an important thing to do. Gardeners who have lived in Colorado very long know that we can have occasional, early freezes which can catch trees and shrubs by surprise while they are still in a vigorous growing condition and not able to cope with cold weather. October of 1969 and September of 1971 should serve as good examples of what can happen.

What can one do to get ready? First of all, it is a good idea to withhold fertilizer applications on all except those plants that are obviously having nutritional problems. There is no point at this time of year to push more growth. The time to do this is in spring. Plants are trying to slow down now, but with continued artificial irrigation and applications of fertilizer to keep the turf green there is a tendency to keep a plant in a soft, succulent condition. Thus it may not have time to get ready for winter.

Withholding water on a gradual basis will also tend to help trees and shrubs to start their normal hardening-off period early. Emphasis should be put on the word *gradual*. To cut off the water supply too suddenly can lead to just as much damage as an early freeze. After plants are fully dormant (mid-to-late October) is the time to apply ample water again.

These recommendations, of course, are somewhat generalities because some plants have the ability to get ready for winter regardless of what is done, how they are watered, or how fertilized. Some good examples are oaks and lindens. These trees as well as others actually start getting ready for winter in July. Take a look at some of the trees in your yard now. You will find that some have ceased putting out new growth and have formed buds which will be the growth for next year. Others, like walnut, soft maple, green ash and goldenrain tree are developing a second flush of growth. These are the ones that are most vulnerable to an early freeze; for these, a gradual withdrawal of water is most important.

Vegetable Garden Problems

The high price of food which led to a tremendous increase in the number of vegetable gardens has also led to an increase in the number of problems.

You should be seeing signs of the tomato hornworm by now, first evidenced by chewed foliage and black droppings. For a small number of plants, they are easily picked off, but Sevin does a good job also.

Tomatoes and potatoes are afflicted by another insect known as a psyllid. This pest is often detected only after the damage has already been done. The adult and the nymph stages of the psyllid feed by sucking the plant juices, leading to a yellowed condition known as "psyllid yellows." Often the leaves are curled as well as yellow, causing a stunting or distortion which will result in little or no fruit on tomatoes and small, marble-like potatoes. A spray or dust of Malathion or Diazinon will help to reduce this problem.

Mites Galore?

At this time of year much browning occurs on the inside of upright and spreading junipers and "stippled", off-color in many deciduous plants. In junipers this browning may be the result of natural shading, especially where they have been heavily sheared. More often than not, however, the browning is the result of heavy infestations of the spider mites. The stippled injury in deciduous plants is a sure sign of mites. If allowed to go unchecked, the mite population will build up rapidly during this hot weather and can severely injure or even kill some valuable plants. Application of Kelthane, Plictran or combination sprays

containing miticides will bring them under control. Also look for the presence of mites on garden flowers and vegetables. Mites can be particularly damaging to corn and beans.

For those not wishing to use pesticides, reasonably adequate control can be obtained by forceful washing down of the plants with a garden hose. This should be done every few days to be effective but do not overwater the plants in the process. Such practice can also lead to mildew problems in roses, zinnias and other similar mildew-prone plants.

Dr. J. R. Feucht

CLASSES

Again field trips lead off this month — some to study wild flowers in the field; one to see hybrids in cultivation.

The Horticultural Arts Society of Colorado Springs will join members of the Denver Botanic Gardens for a day of botanizing on Pikes Peak on August 6th. We will car pool from 909 York at 7 a.m. or meet at the cog railway in Manitou Springs at 9 a.m. *sharp*. (Go west on Highway 24 to the end of Ruxton Ave. in Manitou Springs and follow signs to cog railway.) There is no charge on our part, except for gasoline for your driver, but the railway will charge \$7.70 to take us to Ruxton Park. Sign up now. If there is a problem, *please call and cancel* so someone else may take your place.

August 9 we will journey to Ft. Collins to the Plant Environmental Research Center to see the latest in annual flowers and vegetables. Meet at 8 a.m. at 909 York or at 10 a.m. at P.E.R.C. (Take I-25 to the Timnath Road exit in Ft. Collins, go west to College Avenue and turn north on it for several miles. Turn west on Lake Street until you see P.E.R.C.) No charge but please share gasoline expenses with the driver.

Wild flowers again will be viewed on August 15. Meet at 909 York at 9 a.m. Bring lunch. Free but please share gasoline expenses.

Mr. Vern LaCrosse, a master gardener, has been successful in growing fruit trees in our area. Come to his lecture, *Fruit Trees and Berries*, on August 14th at 9:30 a.m., Classroom C and hear his secrets. Free.

Herb Cookery with Eileen Price is one of the most popular classes we offer. Sign up now (5 spaces remain) by mailing in \$4.00 if you are a member or \$5.00 if you are not, to hold your space on August 22 from 9 a.m. until noon, Classroom B.

Learn some common *budding and grafting techniques* at 9:30 a.m. on August 29. Meet in the propagation room. Free but limited to 10 more people as of this writing.

Both scheduled walks around the outside gardens are full. Why not come on your own? There is a self-guided map available at the gate house and the gardens are open 9 a.m. to 4:45 p.m. daily.

Congratulations to:

Mary DeLill, a volunteer in the Library and Gift Shop, who was recently featured in a column in the Denver Post. This honor is well deserved.

Congratulations to

At the recent A.A.B.G.A. meeting in Denver, the following people received Awards of Merit.

George Kelly, Cortez, Colorado

Ruth Ashton Nelson, Estes Park, Colorado

Catherine C. Sweeney, Coconut Grove, Florida

Tributes

In memory of Mrs. Mildred Anderson
Margaret G. Altvater

In memory of Dr. E. H. Brunquist
Mrs. W. Flourney Rogers
Dr. Frank R. Ross

In memory of Gretchen Clayton for Lobby Court Fund
Jess and Elna Gibson

In memory of Cris Dobbins
Denver Chapter of Executive Women International
Mr. and Mrs. Eugene E. Drake
Grace L. Evans
Great-West Life
Mr. and Mrs. J. Ramsay Harris
Drusilla E. Hoch
Mr. and Mrs. Roger D. Knight, Jr.
J. S. Lind
Mrs. D. F. McMahon
Mr. and Mrs. Gilbert J. Mueller
Mr. and Mrs. J. Churchill Owen
Ready Mixed Concrete Co.
Mr. and Mrs. Frederick Rebsamen
Mr. and Mrs. Arthur Rippey
F. George Robinson
Bruce Smith
Mrs. Charles S. Sterne
Paulene Sutherland
Mr. and Mrs. Russell Thorstenberg
United Bank of Denver
E. Warren and Katherine Willard

In memory of Cyrene B. Frakes
Gertrude J. Bellokossy
Mr. and Mrs. A. Victor Cornelison
Daylight Chapter No. 101, O.E.S.
Mr. and Mrs. Lee W. Grabill
Frances W. Grebe
Jack E. Halliburton
Bernice Marye Lang
Bonnie Rae Lundin
Dr. and Mrs. Louis Retallack
Mrs. Stella Van Brunt
Mrs. Rex B. Yeager

In memory of Katherin Grach
Irma Camblin
Helma Keil
Moras and Erna Shubert

In memory of Ellsworth C. Mitick
B. Carol Adams
Mr. and Mrs. James Aggen
Mr. and Mrs. Tim Allen
Mrs. Alice I. Bealer
Mr. and Mrs. Charles C. Bealer
Mr. and Mrs. Dean Bealer
Eleanor Casebolt
Mrs. Evelyn Cocking
Susan G. Coombe
Ila and Joe De Luca
Mrs. William P. Falligan and Family
Florence P. Foltz
Solange G. Gignac
Gloria Grant
Elizabeth Heacock
Mrs. William Y. Holland
Miss Tena Klimstra
Mrs. Sylvia Lucking
Mr. and Mrs. Richard M. Millard

Glenn and Margaret Mohn
Mr. and Mrs. Peter Norgren
Mr. and Mrs. Donald Olsen
Mr. and Mrs. Albert Pons and Carole
Mr. Tom Pons
Mr. and Mrs. William Rasterl
Mr. Gorman Schellhammer
Mr. and Mrs. Frank Van Osdol

In memory of Alice Evans Moore
Garden Club of Denver
Mr. and Mrs. J. K. Malo
Moras and Erna Shubert

In memory of J. O. Riley
Daniel K. Peterson

In memory of Ruby Simmerman
Colorado Seedmen's Association

"GLAD FASHIONS"

... is the theme of this year's gladiolus show sponsored by Columbia Savings. The hours are 1 to 4:30 p.m. Saturday, August 11 and 10 to 4 p.m. Sunday, August 12. Come see the beautiful spikes inside and then be sure to look outside at our All-America Gladiolus Selection Garden.



RENOWNED MYCOLOGIST TO BE AT MUSHROOM FAIR

Alexander H. Smith, Ph.D., professor emeritus, University of Michigan and author, will be chief identifier at the fourth annual Mushroom Fair, sponsored by the Colorado Mycological Society, in Horticulture Hall, Denver Botanic Gardens, Sunday, August 19, 11:00 a.m. to 4:45 p.m.

Many edible and toxic species of fresh, wild mushrooms will be identified and on display, along with other exhibits and several continuous slide shows. Persons may bring their own mushroom collections for identification. The Rocky Mountain Poison Center will have a special display of computerized microfiche equipment they use in mushroom poisoning cases.

Entrance fee is \$1.00 per person to cover expenses of the event. Photographers are encouraged to photograph the fungal flora of Colorado on display.

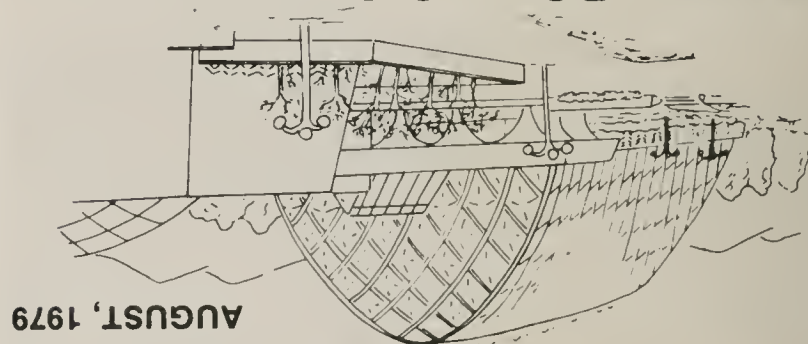
Come See The Dahlias!

Fans of the Masterpiece Theatre series "Poldark" may remember that Demelza was given rare blooms of the "Day-lia". Their tubers were supposed to supplement another new world introduction, potatoes, as a food source but they never found favor with the public. Now they are grown for their beauty only.

And beautiful they are. Join the Denver Dahlia Society on August 25-26, 9—4:45 p.m., in Horticulture Hall and enjoy.

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A NATURAL AREA—WHITE ROCKS

An area called White Rocks in eastern Boulder County has been designated as a natural area under the Colorado Natural Area Program. This 105 acre plot lies in the plains zone, and has several rare and unusual features which qualify it for the program.

First, of these features is an outcrop of Upper Cretaceous Laramie and Fox Hills Sandstone which gives it the name White Rocks. This outcrop is not particularly unusual in itself, but the polygonal rock jointing on the rounded tops of this formation are. Their origin is still to be explained fully, claimed Dr. William Bradley at the dedication on June 26, 1979.

Secondly, there exists the only known population of a fern species in the United States. Its name is *Asplenium andrewii*. As Dr. William Weber explained at the dedication, the fern is a remnant of the past humid climate that existed millions of years ago. Several other unusual members of the plant community include Thalloid liverwort, *Phaeoceros laevis*; a grass, *Aristida basiramea* and the legume, *Apios americana*.

The White Rocks Area is currently owned by Mrs. Martha Weiser who resides there. Now that the area has been dedicated it may be used for scientific research but the natural habitat must not be destroyed. Specifically, the area will be used for the release of predatory birds, therefore hunting and discharge of firearms are prohibited.

Public admittance is not allowed but the Denver Botanic Gardens plans to organize a tour to be led by the owner, Mrs. Weiser. For more information on the Colorado Natural Areas Program call (839-3311) — or contact Colorado Natural Areas Program, Department of Natural Resources, 1313 Sherman St., Denver, Colorado 80203. Also keep an eye on the newsletter next spring for a special tour to White Rocks Natural Area.

Jane Grogan

(Editor's Note: Jane Grogan is a graduate of the University of Denver and has served as an intern at the gardens this summer.)

*Black Canyon of
the Gunnison near
Montrose, Colo.*



Slide Show — August 11 — 1:30 p.m. — Classroom C

Al Daraghy will help us save gasoline but still enjoy our state's beauty when he shows slides on "Let's Look at Colorado". Invite your summer visitors to see our scenery, flowers and places of interest. Free.

LOVE — HONOR — CHERISH

Three new rose varieties have been added to the display garden. They are the 1980 All-America Selection award winners. For the first time in AARS history all three winners are the hybrids of one rose breeder, William Warriner. 'Love' is a red/white reverse bicolor grandiflora. This variety produces an abundance of mid-sized blooms continuously throughout the summer on well shaped, uniform bushy plants. 'Honor' is a large flowered pure white hybrid tea with long pointed buds. The third is 'Cherish'. The shell pink blooms are larger than generally found on floribunda varieties.



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Green Thumb Newsletter

DENVER
BOTANIC
GARDENS, INC.

NO. 79-9

SEPTEMBER, 1979

575-2547



Notice to ALL MEMBERS

If you had your choice and could plan to visit an exciting or unusual horticultural or botanical site, where would you go? Would you choose some place in the United States, in Colorado, or abroad?

How long would you want to be away?

How many other Denver Botanic Gardens members would you like in the group?

What time of year would you like to travel?

These are the kinds of questions which your Travel Committee is asking itself in order to best plan for you. We would welcome your thoughts and suggestions. We want our trips to offer special opportunities to visit places not always available to the ordinary tourist.

So let's hear from you! Send all your thoughts along to:

The Travel Committee
Denver Botanic Gardens
909 York Street
Denver, CO 80206

Many thanks!

Garden With Your Camera

Vegetable gardens are exploding with fresh produce for table use, canning and freezing. Flower gardens are "pretty as pictures" with marigolds, zinnias and other annuals, as well as summer-blooming perennials, painting a colorful scene. Your horticultural successes and perhaps disappointments, likes and dislikes, are razor-sharp in your mind now. But will you remember them next winter and spring, when you are planning for the 1980 growing season? You can by "gardening with your camera".

Pictures are the best reminders of the progress of your garden from spring to fall, how you planted your vegetables and flowers, how they performed, what varieties you preferred, which ones you'd eliminate another year. Two suggestions: Make brief notes of the subjects you photograph and date and label your pictures as soon as they're back from processing.

Take Pictorial Records — Polaroid, Instamatic or 35 mm. cameras loaded with outdoor type color film, or black and white, are easy to use for taking garden shots, but any kind of camera you have should be satisfactory. What types of pictures should you shoot? Whatever you'll find most helpful in planning and growing better gardens year after year, or making your yard more beautiful and useful.

Before and after pictures are some of the most interesting and helpful. If you have a new property, or are going to re-landscape an old one, take pictures from different angles to show the appearance now, and the progress of your efforts over the years. Photograph your summer flower border, and the same location next spring when bulbs are blooming. You'll no doubt see ways to improve the looks for both seasons.

Share Garden Expertise — Garden photography can expand your horticultural knowledge beyond the confines of your yard or neighborhood. Wherever you go, take your camera to record plants, methods, structures, garden details or vast scenes that you like. This is a fine way to get new ideas for your property and to share your increased expertise with friends and neighbors. On a cold evening, why not have a winter "garden party" to preview spring and summer gardening plans. Pass around your album of pictures as you discuss new varieties of vegetable and flowers, as well as tried-and-true favorites. Better yet, put on a slide show but remember:

Keep your presentation short.

Discard fuzzy, poorly exposed, poorly framed or near-duplicate slides.

Select interesting, dynamic slides. Sequence them to tell a story.

Arrange slides properly to project right side up.

Make your commentary brief and to-the-point. Include some personal interest remarks and humor.

You and your friends will soon find out that a camera can be a very helpful "tool" for gardening, along with the more common spade, rake and hoe.

(Courtesy W. Atlee Burpee Company)

DBG Needs Volunteers

The rush of summer is over; the youngsters are back in school and the tempo of life may have slowed down. Take a deep breath and consider — can you find room for DBG this year? As in all non-profit institutions that serve the public, volunteers play a tremendously important role in our programs. Specifically, what about guiding in the conservatory? (See information under Classes.) But, whatever your interest, we'd love to hear from you. Give us a call if you can help — 575-2547, ext. 23.

And note to current volunteers: Please be sure to turn in the record of your volunteer hours this month so they may be tallied. List all activities in which you help the Gardens — plant sale, book sale, guiding, etc.

Tributes

In memory of Cris Dobbins

Rodney S. Davis Associates, Ltd.
Mr. and Mrs. Harry Dowson
Ideal Basic Industries, Inc.
John A. Love
Mr. and Mrs. N. A. Nicolson
Frances P. Sargeant

In memory of Cyrene Frakes

Mr. and Mrs. Robert T. Clark
Helen and Howard Collister

In honor of Mrs. Edna Herres

Crestmoor Park Garden Club

In memory of Ellsworth Mitick

Nellie G. Biggs
Mr. and Mrs. W. B. Garlington
Mary Hessee
Harold R. Keables
Mr. and Mrs. Benton F. Whitaker

In memory of Mrs. Goldena Oakes

The Pinery Tennis Committee

In memory of Kim Sterne for Chatfield Arboretum

Mrs. P. D. Baker
Jean H. Gehrett
James W. Hoban
George Slavin
Joan and Harold Theurer

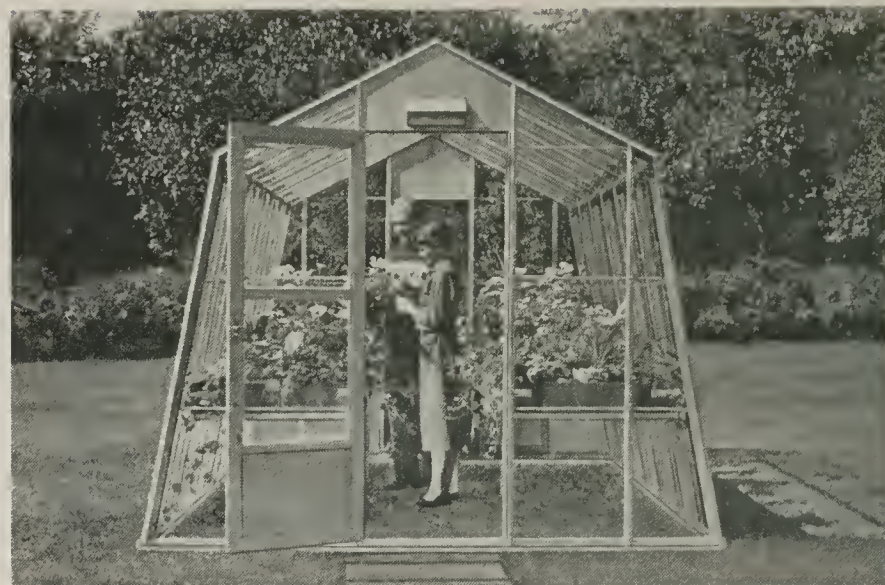
Classes

The class for tour guides *Tropical Plants of the Conservatory* begins our fall program. This opportunity to be a volunteer will begin on September 5 and continues to November 7, from 1-3 p.m. each Wednesday. The group meets for an hour's lecture in Classroom C and the next hour is devoted to plant study in the Conservatory. The cost of \$25.00 is refunded if the student donates 40 hours of guiding time. Limit 15 students.

Twenty people have signed up to tour the *Green Mountain Herb Company* on September 11. You may meet at 909 York at 8:30 a.m. and car pool to Boulder or meet at the firm at 9:30 a.m. (Take the Boulder Turnpike to Boulder, stay on it as it becomes 28th Street, turn right at Pearl and follow it east to 4890 Pearl.) No charge but share expenses with your driver.

After the stunning display of the art of the weavers in the Library and Lobby Court last fall, many people will be interested in signing up for *Natural Dyeing Workshop*. The course on Tuesday mornings from September 11 to October 2 from 9 a.m. until noon, will provide actual experience in collecting plant materials (many at DBG) and in preparing and dyeing fibers. Care and uses of dyed fibers will be covered as will safety precautions. The cost of \$27.50 for members and \$35.00 for non-members includes all materials plus instruction. Limit 15. Meet in preparation room off Horticulture Hall.

The art of bonsai traces its origins back to ancient China but reaches its peak in Japan. The grooming of miniature trees is a way to bring the natural landscape into the home or into a garden. In a Japanese garden small ponds represent lakes; stones represent mountains and the bonsai and other garden plantings represent forests. An evening class *Introduction to Bonsai* taught on Wednesday evenings from September 12-26 from 7-9 p.m. will help clarify the concepts of this art form. The price of \$17.50 for members and \$22.50 for non-members



covers material to create one bonsai. Limit 20. Classroom B.

Another evening class will be most useful to people who are thinking of, or have built a greenhouse. Sign up for *Managing a Home Greenhouse* from September 18 to October 23 from 7 to 9 p.m. Classroom C. Topics to be covered include design and construction as well as day-by-day management. Some solar concepts will also be discussed. The cost is \$20.00 for members and \$22.50 for non-members.

Regretfully we must announce that *Botany for Gardeners* will not be offered as previously listed. It is hoped that this is only a postponement of this course and that Mrs. Nelms will offer it in winter or spring.

A great time was had by all!

Eighty-three happy people crowded aboard a special train of the Manitou and Pikes Peak Railway for a field trip to Minnehaha on Monday, August 6th. This was the first joint activity of the Denver Botanic Gardens and the Horticultural Art Society of Colorado Springs and was held at the site of the Alpine Laboratory operated by Frederic E. Clements until his retirement in 1941. Since then this area of the Pike National Forest has been largely unavailable to the general public and remains in nearly pristine condition.

This was the first chance for many of the group to see plants such as *Goodyera repens*, the Small Rattlesnake Plantain Orchid which was in bloom and the *Penstemon barbatus*, or Scarlet Bugler with its brilliant tubular flowers. The orchid was first described in Colorado by Dr. C. William T. Penland of Colorado College at this location on August 11, 1923.

There were also spectacular examples of *Cryptantha virgata*, or Miners Candle, an endemic found only in central Colorado and southeast Wyoming. There were dense mats of plants — no longer in bloom — of *Viola biflora*, Twin Flower Violet, which in North America is found only in Colorado and Alaska. Also observed was the very dark purple *Geranium atropurpureum* which is very rare in the Pikes Peak region and southwestward.

Lu Long

CACTI & SUCCULENTS FOR MODERN LIVING

An exposition will be sponsored by the Rocky Mountain Succulent Society on September 22-23, from 10-4 p.m., in Horticulture Hall.

Cacti and succulents include some of the most bizarre and beautiful plants. They offer great enjoyment and color, and are also easy to care for. In addition to instructions on how to grow cacti and succulents, many unusual and exotic species will be identified and on display. Selected plants will be available for sale.

Gardening Tips for September

With summer of '79 slowly winding down to what we hope will be a beautiful fall season, perhaps it would be well to remind the home gardeners to properly care for their existing trees and shrubs now so they will be better prepared for whatever Mother Nature decides our weather future will be.

Frost may not be on the pumpkin, but in Colorado this can happen at any time now. Frequently, we enjoy an "Indian summer" with prolonged warm weather and beautiful fall color. If you have not tapered off on the amounts of water you are applying to your trees and shrubs, you will be encouraging your plants to continue to produce soft, succulent growth when in fact, they should be well on their way to becoming hardened off for winter. By gradually withholding water, beginning in mid-August, you are setting the stage for your woody plants to "do their own thing", that is, preparing themselves for winter.

You would do well to cultivate the area beneath your trees and if they are in a lawn area, remove the sod around the base of the plants. By keeping the soil loose and weed-free once the sod is removed, you will reduce competition and whatever amounts of moisture we get through the fall and winter months will be more available to your trees and shrubs.

Removing the sod beneath your trees and shrubs serves a two-fold purpose. First, you are eliminating the possibility of injury to your tree's trunk through careless lawn mowing and second, the sod can be used to replace areas in your lawn which could use a minor "face lift".

Too many times trees are subjected to what I call "Lawnmoweritis". This occurs when attempts are made to move the mower too close to the base of the tree and wounds are inflicted on the trunk of the tree. These wounds frequently provide easy access for disease and insect infestations which many times are difficult, if not impossible to correct.

Selecting Trees

Although springtime is the ideal time to purchase and plant new trees or to transplant them from one area of your yard to another, some success can be achieved by fall-planting provided this is done early enough for them to become established and acclimated prior to winter.

When purchasing new trees, make your selections carefully. Look for quality rather than allowing the price to be your only consideration. Factors to be considered as well as price, would include growth rate, branching habit, brittleness, placement and the purpose the tree is to serve. Exposure is also another important consideration. Trees should be selected for permanence and for future generations to enjoy. They should be selected from the standpoint of maintenance problems, hardiness and disease resistance.

Generally speaking, the faster a tree grows, the more brittle it is, and the narrower the crotch angles, the more easily the limbs will break under the weight of snow. Avoid trees with poorly-spaced branches. Where many branches are coming from the same point or origin on the trunk, there will be a weakened spot which will be subject to storm injury.

If you would like more detailed information on tree selections, request Pamphlet 43 from this author at 909 York, Denver 80206, or call 355-8306.

Planting Depth

The most often repeated mistake made in transplanting trees in this area is planting them too deeply. As a

general practice, trees being placed in heavy soil, typical of the metro area, should be planted so that the top of the soil ball is about two inches above the existing grade. When planting pines *plant them even higher*. The trees should also be mulched with wood chips, leaf mold or other suitable material. Avoid overwatering a newly-planted tree. Dig down around the edges of the soil ball at periodic intervals and check to see what moisture content is in the soil. Do not attempt to keep the top surface constantly moist. The important area is not the surface but rather the root zone which may be six to eighteen inches below the soil surface, depending on the type of plant.

An illustrated booklet entitled, "How to Plant Trees and Shrubs", is available from this author. It not only explains proper techniques, but shows how this is accomplished. Send your request along with 25¢ and we'll be happy to forward a copy to you.

Seeding or Sodding a Lawn?

September is a good month for both seeding or sodding a lawn. Bluegrass is a cool-season plant that will develop strong roots and side shoots (tillers) in the fall. There is also less risk of gully-washing rains that so often damage spring-seeded lawns.

The basics for a good lawn whether it be seeded or sodded, are in the soil preparation prior to installation. Once the lawn is in, it is difficult, if not impossible to amend the soil and improve drainage.

For detailed information on seeding or sodding lawn, as well as on soil preparation, contact this author or your county extension office. Take advantage of the wealth of information and tips on gardening that are available through YOUR Extension Service.

Dr. J. R. Feucht



Tree of the Month

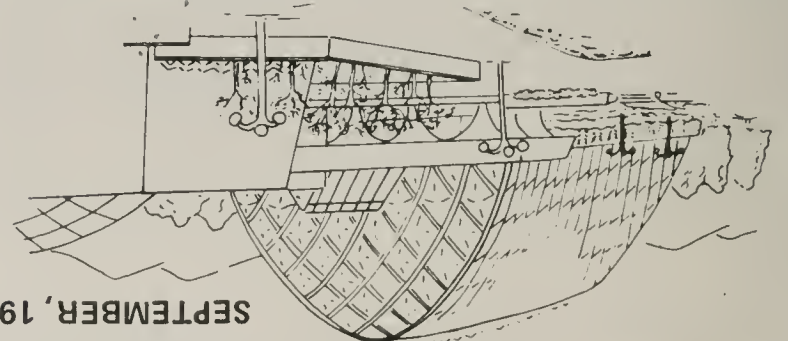
With the fall season approaching, it seems appropriate to feature a tree which will provide consistent and brilliant fall color. To me, the Tatarian Maple is one of the best. This small tree, known scientifically as *Acer tataricum*, is a native of Southeast Europe and western Asia. It resembles the more common Amur Maple, *A. ginnala*, but has mostly unlobed, coarsely-toothed leaves.

In mid-summer, the Tatarian Maple develops bright red, winged fruit which stands out against a dark green foliage. As the fruit drops in late summer, the foliage quickly transforms to a showy yellow. (The Amur Maple turns scarlet in fall.)

This small tree looks best grown as a multi-trunked or clumped plant. To see some excellent specimens, drive by South Josephine and East Warren Avenue in south Denver (near the University of Denver). Several fine Tatarian Maples can be seen right along the street.

Address correction requested
Return postage guaranteed

DENVER BOTANIC GARDENS INC.
909 YORK STREET • DENVER, COLORADO 80206



Now Available in the Gift Shop

Mary Secrest, the manager of the Gift Shop, has announced that more of the unusual ceramic hangings from St. Andrew's Priory in California, have been received. Because of the nature of their manufacture, these are available in limited quantities. Flowers, animals, and saints are made by hand from natural materials so no two are exactly alike. Each is an expression of the wonder of creation.

Also is it time to think about 1980? Well if so, do look at the calendars. They include the PawPrints, Colorado and Americana with pictures by Charles Wysocki.

Pre-Tour Briefing for New Zealand Trip

At 7:30 p.m. on September 5 at 909 York, anyone who is interested is invited to see specially chosen pictures from the New Zealand and Australia Tourist Boards. Although the tour is fully booked, here is an opportunity to see excellent flower pictures. All welcome.

Meeting of the Rocky Mountain Chapter of the American Rock Garden Society, September 15th, 1979.

To start off the season, after a warm summer break, there will be a meeting at 10 a.m. at Denver Botanic Gardens in the greenhouse area to listen and watch Andrew Pierce give a demonstration. The subject will be 'Practical Aspects of Seed Sowing and Potting of Alpines'. Members are asked to get the season off to a good start by coming to this meeting and new members are welcome.

Thought for the Month

While walking in the woods admiring and possibly attempting to identify composites, remember what Asa Gray said about *Aster*: "Never was there so rascally a genus; they reduce me to despair."

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WANTED !!! INDEX SEMINUM

You may not know that Denver Botanic Gardens participates in an International Seed Distribution scheme, usually termed Index Seminum. Such an exchange originates from 1682 between Leiden in Holland and Chelsea Physic Garden in England.

A considerable number of the plants in the Gardens came from this scheme and we participate with many botanic gardens throughout the world including Russia, Japan, Australia, South Africa, Hungary, Italy, Canada, etc.. This exchange will be used extensively to stock the Alpine/Rock garden that is currently being constructed at the west end of the Gardens as such seed cannot be obtained from other sources. Seed distribution is gratis other than postage.

We urgently require a person, who has volunteer time, enjoys the mountains and knows the plants, to collect seeds from our higher habitats as these seeds are in highest demand off our list. Failing that if you have named seeds — I repeat correctly named seeds — from such areas and are willing to donate them, please let me know at your earliest convenience. Many thanks.

Andrew Pierce. Denver Botanic Gardens
575-2547

Free Film

A free film on John Muir will be shown on September 8 at 1:30 p.m. in Classroom C. The American Association for the Advancement of Science recommended this film in the following manner: "*Earth-Planet-Universe: John Muir* presents a historical sketch of the scientist-naturalist who was so instrumental in preserving western wilderness areas. The film illustrates John Muir's great love of the outdoors by providing background information on his life by direct quotations from his writings . . . The film is highly recommended."

Junket Time

Recently a call was received from an ad agency in Dallas. They needed a picture of a seed head of a dandelion and wanted to send a photographer to Colorado to get the desired picture.



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Green Thumb Newsletter



Number 79-10

October, 1979

Chatfield Pumpkin Jamboree and Hayride

Family Members of DBG or those who have contributed \$25.00 or more are invited to the first of many events planned especially for your class of membership! Meet us at 1 p.m. on Sunday, October 21 at the Chatfield Arboretum main parking lot near the schoolhouse. (Take I-25 to County Line Road and go west on Colorado 75. At the Deer Creek Road turn north and go approximately 1/4 mile. The gate to Chatfield Arboretum is opposite So. Carr Road — turn left through this gate. You will see the school house, barn and silo on the left.) Please let us know by October 16 if you are coming so that we may provide the pumpkins. The cost is \$1.00 per adult and 50¢ per child. (In case of inclement weather, meet at Horticulture Hall.)

Classes

Botanical Illustration from October 1 - 22, 10 a.m. until noon will help students learn the techniques of accurate representation of biological material. Your instructor did many of the illustrations for Weber's Fifth Edition of *Rocky Mountain Flora*. As of this writing there are six spaces remaining. The cost is \$15.00 for members and \$22.50 for non-members.

As mentioned in the September newsletter, *Botany for Gardeners* will not be offered at this time.

The *Nature Walk* on October 6th is full. Those who have already registered should meet at 9:30 a.m. where Belleview crosses the High Line Canal at Birch Street. Parking is available on both sides of the road.

Dr. Zeiner will explain about *Forcing Bulbs for Indoor Bloom* on October 17. Please meet at 10 a.m. in Classroom C. All welcome.

Finally this quote from Joseph Addison may get people in the mood for *Landscape Horticulture for the Home Owner*, October 18 - November 15, 7:30 to 9:30 p.m., Classroom C. The cost is \$15.00 for members, \$22.50 for non members. Sign up **NOW** for this course always fills up before class time.

You must know, Sir, that I look upon the Pleasure which we take in a Garden, as one of the most innocent Delights in humane Life. A Garden was the Habitation of our first Parents before the Fall. It is naturally apt to fill the mind with Calmness and Tranquility, and to lay all its turbulent Passions at Rest. It gives us a great Insight into the Contrivance and Wisdom of Providence, and suggests innumerable Subjects for Meditation. I cannot but think the very Complacency and Satisfaction which a Man takes in these Works of Nature, to be laudable, if not a Virtuous Habit of Mind.

The Spectator, 6 September 1712

Associates Meeting

The Annual Meeting of the Associates is scheduled for October 23rd in Horticulture Hall. Come join your friends and hear about the many projects that have been accomplished this year! The business meeting will start at 10:30 a.m. followed by lunch and the program "Art and Music in Nature" presented by Dr. Oksana Ross. Dr. Ross, now on the faculty of the University of Colorado, weaves music and slides together in a multi-media presentation that promises an excitingly different program. Be sure to return your reservation slips promptly to Alva Schloss.



Tea House

Many requests have been received to visit the tea house at Shofu-En (Garden with Pine Wind) but as will be readily realized, it could not be open without someone in attendance. We are pleased to announce that Kim Thrasher, a student of Japanese culture, will be present on October 6 from 10 a.m. until noon to acquaint visitors with various aspects of the building. It is hoped this opportunity will be available the first Saturday of each month throughout the winter.

Ikebana Demonstration

Ohara School of Ikebana demonstration by Natsuki Ohara, headmaster designate of the Ohara School from Japan, on October 16th at 1:00 o'clock in Horticulture Hall. \$10 donation. For further information call:

Mrs. Willard Erickson — 343-3666

Mrs. Lloyd Stuebinger — 343-7618

Note to All Members!

Currently we are suggesting a donation at the Gatehouse of \$1.00 for adults, 25¢ for children. Members of course are admitted Free.

Wildflower Series

Would you like to be able to enjoy wildflowers all year around? Now you can. The National Council of State Garden Clubs, Inc. has originated a program in cooperation with Spring Mills and J. C. Penney Stores in which a pattern of named wildflowers will be offered in a complete line of merchandise. On sale now at eleven of the larger J. C. Penney Stores across Colorado in "America's Wildflower" pattern are towels, pillow cases, sheets, bedspreads, comforters and shower curtains. In the near future there will also be on the market wallpaper, a lamp, table linens and yard goods. From the sale of all these items, National Council will receive 1%. Research is the first place the money will go. We need more information on germination time, soil and moisture roles and seed distribution of wildflowers.

Also at these first eleven J. C. Penney stores, wildflower prints in 8" x 10" size will be on sale from the slide program of Joan and Herb Franson. The profit from the sale of these prints will be used only for the Colorado "Operation Wildflower" and will be spent on wildflower seeds which the Colorado Highway Department will plant along state highways. The pilot areas for the first wildflower seed plantings will be on the major Interstate Highways crossing metropolitan Denver. I-25, I-225 and I-70 will have one site each selected for the initial "Operation Wildflower" plantings. Be patient in waiting for the blooms to spring up — the seeds may not germinate in the first year. If you are interested in contributing to the "Operation Wildflower" project in Colorado, your contribution (properly identified) may be sent to Mrs. Herb Franson, 6804 Dover Street, Arvada, Colorado 80004.

Joan Franson

Orchid Show

The Denver Orchid Society will be having its fall show — "Autumn Symphony" on October 6th and 7th. The show will be judged by American Orchid Society judges, and will be held at the Denver Botanic Gardens — Horticulture Hall. The public is cordially invited to attend on Saturday, October 6 or Sunday, October 7 from 10:00 AM until 4:30 PM.

There will be exhibits of many varieties of orchids grown locally. Talks will be given on 'Native Orchids of Colorado' and the Tribe of *Pleurothallis*, with emphasis on differentiation of the species.

There will also be many orchid books and plants for sale. Experienced growers will be on hand as well as culture sheets passed out to help explain how to grow orchids in Denver.

Anyone interested in exhibiting at the show should contact the show chairman, Pat Trumble at 530-2503 or Jim Weiss at 442-3570 for further information.

Save the Date!

Word has just been received that an arranger from Williamsburg, Va. will be at the Gardens on November 7 at 10 a.m. Miss Betsy Kent will present a program on "Holiday Decorations at Williamsburg" as a benefit for the Colorado Federation of Garden Clubs, Inc. More information will be available in the November newsletter but make plans now to attend and bring your friends.



Two tall slender vases by Dorothy Steidley and stoneware jar by Trudy Fowler will be shown in the Fall Show presented by the Colorado Potters Guild.

Potter's Guild Show and Sale

This fall the Colorado Potters Guild will again hold their plant and flower container exhibition and sale in Horticulture Hall. The potters have been busy designing and producing a variety of containers including those for Ikebana, bonzai and outdoor gardens. Members of the Ikebana International Denver Chapter 66 and the Federated Garden Clubs will select some of the pots for special arrangements. These are always a highlight of the show. The exhibition and sale hours are October 13 and 14, 9 a.m. to 4:45 p.m.

Further Recognition

Information has been received that the Denver Botanic Gardens House at 909 York was recently entered in the National Register of Historic Places in recognition of its significant contribution to the historical and architectural heritage of the State of Colorado.

Tributes

In memory of Jack N. Anderson

Mrs. F. V. Altvater

In memory of George Vernon Becker

Barbara and Gilbert Brown

In memory of Maureen Hoch

for the new orchid house

Mr. and Mrs. Richard Eber and family

In memory of Mary Frances Proctor

Rebecca Pritchard

Nancy Reed

In memory of Cecil Mankoff Radetsky

Gayle Ann Weinstein

In memory of Ruby Simmerman

Arkansas Valley Seeds, Inc.

Gardening Tips for October

Some Fall Garden Chores

This is a good month to “put your garden to bed”. While records indicate that a killing frost can occur anytime between the first of September and the fifteenth of November, October is the month in which this usually happens. Once a killing frost has occurred, it’s a good idea to do as much as possible to get your garden ready for the winter months ahead.

Tops of perennials can be cut back and annuals pulled. Rather than discarding them, chop them and use them for compost, or simply chop them and spread over the garden where they were growing. If done carefully, you can use a rotary lawn mower to do this. A sharp spade will also do the trick.

Soil improvement, an important chore, can be done in the fall. In addition to incorporating your garden debris, you may also want to add aged barnyard manure or peat moss. If you use peat, try to find the coarsest available. Some of the locally sold mountain peats are not sufficiently coarse and will sometimes even act as a glue when added to a clay soil, creating a condition worse than before.

If you want to add sand to your soil, keep in mind that it can also create a problem unless you select the proper type and the amount added is adequate. As a general rule, you will need to add at least one-third the volume of the soil you are cultivating. In other words, if you are rototilling six inches deep, you should add at least two inches of sand. This is the equivalent of about six cubic yards per one thousand square feet. Avoid fine, masonry sand or that which has not been thoroughly cleaned. Some of the river run sand available is high in clay particles which can add insult to injury.

I prefer leaving the soil loose and lumpy. More moisture is retained and the freezing/thawing action during the winter months will break down the clods. The end result will be a fine, mellow, easy-to-work soil next spring.

Rose Care

Your hybrid teas can be trimmed back slightly, making them look a bit better. Cut back all dead blossoms and remove any weak or interfering canes. Avoid the temptation to cut them back to stubs. This is best done late in April next year. You may prefer to mound your roses to give them additional protection but be careful about using a loose, well-drained material. Heavy clay soils will tend to become compacted. Leaf mold mixed with your own garden soil is one of the most satisfactory materials for this purpose. Many rosarians have found they can be successful without mounding, provided the roses are planted in the proper location and in a good, well-drained soil. Freezing apparently is not the real problem with roses and their survival during the winter months depends to a large degree, on whether or not they receive adequate moisture. If roses are located in a hot exposure, they will be less apt to make it through the winter than those in a cooler location such as an east or north exposure. It’s a good idea to check your roses throughout the winter months by digging down in the soil when it is not frozen and if needed, add supplemental moisture. This is also true of your other perennials, trees and shrubs.

Planting Bulbs?

Along with your usual fall planting of bulbs, why not consider the unusual and plant something unique for next year? Try planting a few ornamental onions. For that matter, even the flowers of a regular garden onion can be decorative. Among the ornamental varieties available, are some outstanding ones which will make quite a show as border flowers. Included are the Turkestan and Lily Leek. The Turkestan onion has a broad foliage, unlike a regular onion and resembles more in shape and size, a *Hosta* (Funkia.) It is a low plant — about six to eight inches tall — and produces a spherical head of rose-pink flowers in mid-to late May. The Lily Leek is a taller onion with a glossy green, straplike foliage and a cluster of bright chartreuse-yellow flowers. They flower about the same time as the Turkestan and grow to a height of eight to ten inches.

Chives will serve a dual purpose — their pink flowers provide a show in spring and the foliage can be used as an herb all season. They can be used for borders, in rock gardens, or even tucked in among shrubs. Neither onions nor chives are fussy about soils, although they will perform best in a well-drained location, much like any other bulb. Depth of planting depends on the bulb size. As a general rule, planting depth is determined by bulb size. Plant them three to four times deeper than their diameter. If the soil is a bit heavy, don’t plant them quite that deep.

If you’ve had trouble with bulbs emerging too early in spring, only to be frozen, try applying three or four inches of loose mulch *after* the ground has frozen. This will help keep the soil cold and reduce the tendency for early spring growth.

Fall Color

Fall color should still be prevalent and if you are looking for striking color in a variety of trees, Fairmount Cemetery is one place to go. You will find the spectacular, historic oaks, to name one variety, bedecked in full array. An illustrated booklet, “*A Trail of Trees*”, depicting and describing many of the trees in Fairmount is available at a nominal price from either the Denver Botanic Gardens Gift Shop or the main office at Fairmount. Enjoy your trip. You’ll find it rewarding.

Plan to attend a guided tree walk along the trail of trees in Fairmount Cemetery on Saturday, Oct. 13 at 2:00 p.m. Meet in the parking lot at the main entrance on Quebec Street closest to Alameda Avenue.

Mr. E. Alan Rollinger and Dr. James R. Feucht will lead you along the trail, identifying trees and pointing out their special features.

New Book By Kelly!

Shrubs for the Rocky Mountains, a companion book to *Trees for the Rocky Mountains*, is now available in the Gift Shop. It is the first book to treat shrubs for cultivated use in this arid alkaline area. Four hundred twenty different shrubs are mentioned and many pages are devoted to general information about growth and care of shrubs.



October 1979

Denver Botanic Gardens, Inc.
909 York Street
Denver, Colorado 80206
303-575-2547

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Denver, CO

Leaves

Leaves die sensibly, considerably—
Often beautifully.
There are no maudlin regrets,
No greedy insistence upon immortality.
They frolic with the wind
To celebrate the event.

The mould will be the happy hunting ground
Of their liberated molecules,
Their future the future of
All of life—
Even man.

Dr. E. H. BRUNQUIST

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Ernest Brunquist.)



Dried Plant Display

A demonstration on dried plant arranging will be held October 2 at the Denver Botanic Gardens in classroom B at 9:30 a.m.

Designers, Janette Ray and Brenda Johnson of Veldkamp Flowers will direct the free demonstration which will feature arrangements from small weed bottles to large standing floor pieces. Veldkamp's will supply some of the more exotic, imported pods, blooms and grasses but many of the dried materials used in the workshop will be provided by the Botanic Gardens and will be representative of plants that will be available at the Christmas Sale, November 16 and 17.

During the month of October the Helen Fowler Library will display a variety of dried arrangements designed by Veldkamps.

Botany Club — October 19, 7:30 p.m. Classroom C

Al Daraghy will present a slide show on plants that are not commonly seen here, entitled "You Can Find Them in Colorado." Free and all welcome.

Free Film — October 13, 1:30 p.m. Classroom C

Our monthly film series continues with "The River Must Live." This is described as a well-made film with excellent photography and sound quality relating to ecology, resource management and freshwater biology. It briefly covers the way in which society has impaired the useability of many major waterways and discusses the growing need for additional water resources.



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Green Thumb Newsletter



Number 79-11

November, 1979

Information to Members

Members may be interested to see some of the information that was presented at the budget hearing before the Mayor and Council in September.

A. Update on Progress at the Gardens on York Street

1. 1979 — The Gardens reaches its highest peak of physical development in its 28-year history.
2. 1979 — Two-acre Japanese Garden 75% complete; completion 1980. Cost \$250,000.
3. 1979 — Rock and Alpine Garden, another new unit for Denver; 75% complete; completion 1980. Estimated cost close to \$150,000.
4. 1979 — Construction begun on the new Orchid-Bromeliad House; completion late 1980 - early 1981. Estimated total cost approximately \$500,000.
5. 1979 — Designing and first steps toward construction of a Scripture Garden; completion 1980. Estimated total cost \$25,000.
6. 1979 — Home Demonstration Garden, design completed, construction ready to begin; completion 1980. Estimated cost \$25,000.
7. 1979 — Miniature Rose Test Garden, the fifth sponsored in the United States by the American Rose Society; construction started, completion early 1980. Approximate cost \$2,500.
8. 1979 — Other new additions at the Botanic Gardens include: (1) new Perennial Garden Borders on either side of our Linden Allee; (2) new test plots planted with flowering plant ground covers as contrast to turf; (3) planting of around 15,000 new flowering plant bulbs for spectacular display in spring of 1980, over half donated by the Netherlands Flower-Bulb Institute; (4) design completed and construction ready to begin on Plains Garden; completion early 1981.
9. 1979 — SUMMARY — Completion of the unique master plan for the York Street Gardens now seems assured by 1982, if not earlier.

B. The Financial Story on York Street

1. Developments listed above made possible by Botanic Gardens' highly successful development fund campaign, June, 1977 to December, 1978. Original goal \$1,500,000; goal achieved \$1,800,000, thanks to the generosity of corporations, foundations and citizens of Denver, Colorado and elsewhere.
2. New gardens require additional staff gardeners for proper maintenance. Requests for these have been rejected by the City.
3. Botanic Gardens has been forced to use hard-to-get private funding to employ high school and college students in the summer to maintain the level of achievement we feel necessary.

4. Botanic Gardens now employs at the peak of the growing season ten to twelve garden helpers and ten to twelve full-time or part-time helpers in other aspects of the Gardens' work and programs.

5. During the entire year the Botanic Gardens depends heavily on assistance from over 400 volunteers.

C. Financial Support from the City and County of Denver.

1. Proposed 1980 budget reduces appropriations in the 6,000 codes, 7,000 codes, 8,000 codes and 9,000 codes to a total figure approximating *one-fourth* of the actual 1980 needs.
2. Botanic Gardens cannot reduce city-paid staff without sacrificing the level of excellence it chooses to maintain in its facilities. No one wants a half-cared-for garden.
3. City budget reductions combined with the inroads of inflation will make it necessary for the Denver Botanic Gardens, Inc., to assume a financial burden of just a little short of \$100,000 in 1980 to maintain the progress which has been achieved to date.
4. At the point when the Botanic Gardens needs its maximum level of maintenance help, continually decreasing city support and inflationary losses combine to produce a critical financial situation in the Gardens.

Therefore:

D. Proposed Attempt to Meet the Financial Crisis

1. The Botanic Gardens is now drawing up plans to augment, hopefully, its operating and capital income, through imposing a gate admission charge for the first time in its history.
2. January 1, 1980 has been set tentatively as the date to implement this plan which will be ready soon for city examination and approval.

However, we wish to assure all members that by showing their membership cards at the gate, they will be admitted free if such a charge is imposed.

Everyone will be relieved that we do not plan to follow Kew's precedent of many years ago. "Only approved visitors armed with a permit were admitted and even these were not encouraged . . . You rang a bell by the side of a small wooden gate . . . You were let in by stealth as if the gatekeeper were ashamed to see you come . . . and when you were there you were dogged all the time by an official. . ."

Slide Show

Dr. Carl Tempel will show slides of the tundra flowers on November 10 at 1:30 p.m., Classroom C. This beautiful show is entitled "A Trip to Mt. Goliath — Denver Botanic Gardens' Alpine Garden." All welcome to this free show.

Gardening Tips for November

Now is a good time to give all of your trees and shrubs a good, deep watering. This has been a beautiful fall but despite the rains in August, subsoil moisture is severely depleted and the root zone of most trees and shrubs is critically dry.

Woody plants should not be allowed to go into the winter months in a dry condition. They need reserve moisture to combat the desiccating cold that follows. Cold alone is not usually a problem with the hardy plants in this area but cold along with low humidity, typical in the winter months, windy conditions and dry soil contribute to the winter kill that often occurs. This was experienced last fall and winter and as a result, many trees and shrubs were severely injured — some dying by the middle of the summer. Particularly obvious was the dieback that occurred in the white-barked European birch, the cottonwoods and willows. Much of this damage can be prevented by deep watering now and at monthly intervals as long as the ground remains unfrozen.

Even if you irrigate to keep your lawn green or if there are occasional rains or snows in the next few weeks, a deep watering is still advised. Lawn watering and most light rains and snows fail to penetrate deep enough to do much good for your more deeply-rooted trees and shrubs.

To deep water properly it is advisable to use a hose-attached soil needle such as the Ross Root Feeder. Insert the rod in the ground, angling it slightly away from the plant, to about $\frac{1}{2}$ the depth of the rod, or about 18". Turn the water on full force and allow the rod to remain in the soil a minute or so. Move it six to eight inches and repeat the process. On established trees and shrubs this should be done in a circular area around the plant, starting just inside the so-called "drip line", and extending several feet beyond. This is a time-consuming task but very worthwhile because it puts the water down where the root system is and in addition, helps to aerate the soil and thus improves the environment for better root growth.

This is a much preferred method over soaking with a lawn sprinkler, particularly in heavy clay soil. Thoroughly saturated, heavy clay soil can create an oxygen starvation condition in the root zone. Plants under such conditions will dry up in the same manner as if the soil had insufficient water because root rot will begin to occur and the roots cannot take up the water.

If you have newly-planted trees and shrubs, use the soil needle just outside the original root ball, also angling it away from the plant, but occasionally push the soil needle into the root ball itself to ensure that it gets adequate moisture. Avoid leaving the soil needle in one spot too long to keep from water-logging the root system.

You can reduce the frequency of watering by applying a loose mulch on the surface of the ground over the root zone. Wood chips, composed leaves or any other organic material that does not compact would be suitable. For best results, apply a mulch 4" or deeper. Such mulch will also help in preventing the soil from freezing too early on recently-planted nursery stock. This will allow the plant more time to develop a root system and it will be better able to cope with the winter conditions.

Your evergreen trees and shrubs need supplemental water during extended dry periods through the winter months. Evergreens lose water at a more rapid rate than deciduous plants because they have foliage with a large surface area exposed to the elements, making them more subject to water loss.

Keep in mind that a plant, while called dormant in winter, is still active in the sense that it must take up and replace water lost. Such activity occurs during cold, freezing weather, although at a slower rate.

You need not fear that watering at this time will stimulate late growth. Plants that are hardy and acclimated to this climate have gone into sufficient dormancy, that is, they have changed their chemistry sufficiently that watering now will not reverse the process.

Dr. J. R. Feucht

Tributes

In memory of C. Canby Balderston

Mr. and Mrs. John Falkenberg

In memory of John St. Aubyn Boyer

Mr. and Mrs. Theodore A. Boerstler

In memory of Dr. Ernest Brunquist

Suzanne Ash

In memory of Cora Carroll for the Rose Gardens

Colorado Watercolor Society

In memory of Katharine Crisp

Rachel Agrelius

Suzanne Ash

Carl Blaurock

Gladys L. Bode

Mr. and Mrs. John Falkenberg

Mary C. Frost

The Home Garden Club of Denver

The Monday Luncheon Group of the East High

Retired Teachers

Mr. and Mrs. J. V. Petersen

Margaret Sikes

Mary M. Washburne

In memory of Cris Dobbins

Mr. and Mrs. John C. Mitchell

In memory of Ellsworth Mitick

Mr. and Mrs. Gerald R. Shanks

In memory of Campbell Robertson

Mr. and Mrs. John Falkenberg

Margaret Sikes

Mary M. Washburne

In memory of Randy Schneider "A Tree for Randy"

His classmates in the fourth grade at Lincoln

Elementary School

Classes

When *Beginning Botanical Terminology* was offered previously the participants were like Oliver Twist and asked for more. Come November 8 at 1 p.m. in Classroom C and Dr. Gambill, our Director, will be glad to oblige. Free and all welcome.

Holiday Breads on November 10 is full. Registrants should bring all material as mentioned in the Schedule of Classes and meet at 9 a.m. in Classroom B.

Christmas Sale

November 16 and 17

It's beginning to look a lot like Christmas here at Denver Botanic Gardens as volunteers prepare for their pre-Christmas sale Nov. 16 and 17 in Boettcher Memorial Center, 1005 York Street. Fragrant potpourris have been blended, herb vinegars brewed and bottled, cones, pods and seeds collected, holiday treasures crafted — these traditions are part of the 16th annual benefit for the Gardens. Sponsored by Associates the sale will be held from 10 a.m. to 4:30 p.m. each day.

Fragrance Gifts. Sumptuous boudoir pillows, dainty sachets and tranquility pillows, some pillows in bold botanical prints, have been fashioned using 15 delicately fragrant potpourris. Honeysuckle is this season's addition to such heavenly scents as orange blossom, violet, mints, lavender and sandalwood. Rose petals, lavender florettes, orange blossoms have been packaged to be combined with a variety of perfume essences, fixatives and oils for personal concoctions.

Tooth fairy pillows, plump with delicious tutti-frutti potpourri, can nudge a child's fancy and turn regret into delight. Pet pleasing catnip fish and mice can also be found at Fragrance Corner. Here, too, are the traditional frankincense and myrrh, vanilla and tonka beans, cinnamon sticks and herb seasoned salt accented with a dash of paprika.

Treasured Handcrafts include such trim-the-tree ornaments as miniature wreaths of natural materials, owls, and, of course, the rope ponies, the cowboys and cow-girls attired in 'genuine leather' to provide a western holiday theme for last year's Lobby Court tree. Wall hangings include delicate wreaths of baby's-breath and other airy everlastings, decorated brooms and rug beaters plus the ever-popular three-ring panels of seeds, pods and little cones.

Herb Vinegars. Carefully blended from a generations' old recipe, more than 3000 pints of herb and tarragon vinegars have been bottled by members of the Guild.

Everlastings in flowers, cones, pods and other dried natural materials have been assembled by members of Around the Seasons Club. Sweet gum balls and acorns, graceful cones of eastern white pine and attractive limber pine cones, giant heads of stars-over-Persia plus stems of starry gasplant are a few of dozens of sought-after supplies. Perky "gatherings" of go-together flowers will also be available.

Sconces and Candlesticks are adaptations of the wood spools, bobbins and shuttles once found in spinning mills throughout New England. Made of beech, maple or another hardwood, the spools were not oiled or polished — the natural lanolin in the wool spun onto them gives them a lovely finish and the bright threads are enhancing.

Children's Gifts include the cherished figurines, books and puzzles by Beatrix Potter; fabric animal finger puppets, wooden toys, animal erasers, bird playing cards, stuffed velvet or silk animals. The *Audubon Bird Coloring Book* and Dover coloring books which detail wildflowers, weeds, herbs and plants are entertaining and educational. *Peter Rabbit's Natural Foods Cook Book* has edible recipes to coax a youngster's culinary prowess. *A Book of Christmas* features pop-up creche, advent calendar and more, by Tasha Tudor. Among her other books, all of

which contain excellent botanical illustrations are: *Old-Fashioned Gifts*, *Take Joy* and the standards, *A Is for Annabelle* and *1 is 1* (one is one).

Books Are Forever. New titles are George Kelly's, *Shrubs for the Rocky Mountains*; *Pods, Wildflowers and Weeds*, *This Noble Harvest*, and *Wildflowers and The Story Behind Their Names*.

Pressed Flower Bookmarks, so popular throughout the year are especially thoughtful remembrances at this season.

Miniatures in charming tea sets, thimbles, candlesticks, birds and animals in decorated porcelain are featured this year. Display shelves and shadow boxes to show them will be offered.

Boxes and Boxes. Pill boxes in brass, enamel and cloisonne, egg or heart-shaped boxes in polished alabaster or Spode china; handwoven silk jewel boxes, others of pastel straws lined with exquisite fabrics — the variety is endless. Some are soapstone with inlay or laser-carved walnut.

Jewelry. Bright blue Colorado columbines in miniature decorate stickpins, earrings and pendants. Tiny sliced geodes, encased in 24K gold, accent necklaces, earrings and stickpins. Enameled quail eggs handpainted with nature motifs are unusual suspended from a gold chain. Stunning amber and jade jewelry as well as aspen leaf and cloisonne are enticing.

Nostalgia Teasers are thimbles, pierced sandalwood fans, dinner bells of crystal, china or brass, paper weights in multi-colored Italian glass, lucite weights contain natural scenes or flowers including exotic seed heads of dandelions. Handcarved and handpainted wooden birds are also preserved in lucite weights.

Kitchen Brighteners. Spoon racks, decorative tiles, place mats, trays and trivets, slicing boards, herb or floral designs on linen towels plus brass towel clips are a few of many suggestions.

Accents for Home of Office are carefully selected. A child with bird, a wall statue of St. Francis, a snail, are among the works of Isabel Bloom which are suitable for outdoor or indoor gardens and sold exclusively in Denver at Botanic Gardens Gift Shop. Decoy ducks by Ron Fisher, lasercraft walnut desk accessories, natural scenes etched in acrylic panels; Mel Dobson's bird and animal studies in striking aluminum and black panels are framed in walnut; the quaint religious plaques from St. Andrews Priory — muted greys, blues, yellows and other earth tones depict The Nativity, Noah and the Ark, St. Francis, St. Jude — each is an expression of the wonder of creation.

Accessories from Afar. Gifts from the Orient are in profusion: lanterns, ginger jars, folding table screens, scrolls, teakwood plate holders and stands, cloisonne vases, Foo dogs, peacocks and dragons are creations in porcelain or brass. Angels, madonnas and animals from the Aegean Sea, Austrian cut crystal prisms and crystal reflectors; wildlife sculptures are from Montevideo, Uruguay.

A Gift for All Seasons. Membership in Denver Botanic Gardens. A membership booth is stationed in the Lobby Court. Various memberships will be explained and selected plants are free as token gifts.

Volunteers are quick to note that a gift from the Gardens is a gift to the Gardens for all proceeds benefit Denver Botanic Gardens.



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Lobby Court and Tea House

The garden flower of the orient is featured this month in the Lobby Court. From time immemorial the chrysanthemum has been regarded as a sacred flower in the East and has been used as decoration on china, fans, screens and cloth much as the rose is in the West. It is often considered the national flower of Japan but that honor belongs to the cherry blossom. The 16-petaled chrysanthemum is the insignia of the Mikado himself, however. Other oriental symbols will be explained by Kim Thrasher who will be stationed in the Japanese teahouse at the northwest corner of the Garden on November 3 from 10 a.m. until noon. Come and talk with him and think of "One room, a vase, a single morning glory."

Insects/People Program

A special program on "Insects, Plants and People" will be open to the public without charge Sunday, November 25, at 7 p.m. at the Denver Botanic Gardens under sponsorship of the Entomological Society of America.

The public session will focus on integrated pest management (IPM) and will feature presentations by Dr. Robert L. Metcalf, Professor of Entomology at the University of Illinois, Urbana, and Dr. James R. Feucht, Professor of Horticulture at Colorado State University and Denver area Horticulturist for the CSU Extension Service.

Holiday Decorations at Williamsburg

On November 7th at 10 a.m. the Colorado Federation of Garden Clubs will present Miss Betsy Kent in a lecture/demonstration in Horticulture Hall. Miss Kent does the arrangements for homes and public buildings in Williamsburg. Her presentation will conclude with slides of colonial Williamsburg. For information and reservations write to Colorado Federation of Garden Clubs at 1556 Emerson, Denver, 80218 or call 444-3045 or 936-4608.

Slides on Arizona

The Denver Botanic Gardens is planning a trip to Arizona next spring. A preview of the beauty of the desert in bloom will be provided when the Botany Club will feature slides on "Spring in Arizona" on November 16th, 7:30 p.m., Classroom C. All welcome to view these lovely pictures.

New Insignia

Observant readers will have noticed the new logo appearing on all publications of the Denver Botanic Gardens. David Warren of Pictograms, Inc. is the man who is responsible for our new look.



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Green Thumb Newsletter



Number 79-12

December, 1979

The Associates of Denver Botanic Gardens Are 15 Years Old

Fifteen years ago on May 27, 1964 eight members of Denver Botanic Gardens met for the purpose of discussing the formation of a working volunteer Association that would give the Gardens physical and financial help on an organized basis. They were aware that they had big ideas and that it might take 5 or 10 years before their dreams were achieved. Little did they know! These women were:

- *Mrs. G. B. Morrison — Fran
- *Mrs. J. V. Petersen — Pete
- *Mrs. Robert Kosanke — Avalonne
- *Mrs. John F. Falkenberg — Gloria
- *Mrs. T. B. Washburne — Mary
- Mrs. H. W. Neil
- Mrs. Robert Davis
- Mrs. Chard Smith, Jr.

*Five of these eight women are still some of our most active volunteers.

We owe our roots to them.

I would like to mention some of the proposals made at this May 27, 1964 meeting. My going into all details of their hopes and plans is impossible of course.

They had drawn up a list of suggested Committees, among which were:

- A. Garden Maintenance, weeding, planting, etc.
- B. Guided Tours. (The fine publicity and public interest this has since brought our Gardens is impossible to measure.)
- C. Gift Shop. (Our beautiful Gift Shop has become the mainstay of money raised that has been donated to the Gardens. Also our beautiful Christmas Sale has added greatly to our funds.)
- D. Office Work.

On September 23, 1964 the first Annual Meeting of the Associates was held for the purpose of ratifying the Bylaws, to elect officers and to answer questions about the organization and its intent.

The Trustees of DBG advanced the Associates \$500.00 to get started and they were off and running. This \$500.00 was paid back less than a year later and they have never borrowed a cent since.

The first Gift Shop was opened in the Denver Botanic Gardens House, at 909 York St. It moved to a tiny space in the Lobby of our present Conservatory on January 11, 1966. Later on it moved to its present location.

Often the Associates are asked to take care of special events held at the Gardens, such as luncheons. At times we are asked to plant bulbs, annuals, and perennials, and to help weed the flower beds. We also plan and execute the Christmas Sale, decorate the Lobby Court for Christmas, beautifully. We help with the annual Plant Sale in May. When the Gardens had a fund raising campaign called "To Fulfill a Promise" the Associates helped too.

From October 1, 1978 to October 1, 1979 the Associates gave almost 25,000 hours in volunteer work to the Gardens.

Some mention certainly should be made about our gifts to the Gardens and if this sounds like bragging, it is.

Our gifts have included such tangible things as: two Greenhouses; an underground deep well water system; the Gazebo; Landscaping around the Educational Building; the Lilac-Fragrance Garden and Fountain there, in honor of Dr. A. C. Hildreth; and such things as waterproofing two little lakes, one in the Gates Mountain Garden and the other in the Japanese Garden; a pickup truck; a power saw and sander; snow plow blades and chain; educational material, such as a large projector and screen; an engraving machine for labels on plants; a new cooling system for the Greenhouses; an outdoor portable lectern with a built-in sound system; even furnishings for the Ladies Rest Room.

Since 1969 the Associates have given many thousands of dollars to the General Fund of Denver Botanic Gardens; assisted in the purchase of the houses on York Street, north of the Children's Gardens; given assistance to the Educational Fund for students working in the Gardens; given assistance to the Library for some of the furnishings and the purchase and binding of books. Since 1971 monthly assistance has been given to the Library for the purchase of books. Money was given for the architect who drew the plans for the present Gift Shop. Last year an unrestricted gift was given to the DBG House.

We have given several thousand dollars to the Chatfield Arboretum of Denver Botanic Gardens. This Arboretum of about 700 acres is being planned and developed as a facility which will benefit our Community through its aesthetic value and be an important information and educational center with a collection of native plants and species from as large a range of habitats as possible. It will show the development of virgin prairie to productive farm land.

Last year, included in our gifts to the Gardens was a substantial sum toward the development of the Alpine House and this year a munificent sum was given to the Trustees of the Gardens which included a sum to the General Fund, a sum to Chatfield Arboretum, a sum to the Endowment Fund of DBG and a sum for the balance needed to complete the Alpine House.

All this began 15 years ago when these farsighted Founders of ours borrowed \$500.00.

Peggy Altwater

Gardening Tips for December

December always seems to be a difficult month to talk about gardening, but there is one little chore that may need to be done, depending on the weather conditions, and that is to deep water your trees and shrubs, particularly if the month turns out to be dry, as it has been in the past. Even though the surface of the soil may be moistened by occasional snows, it is important to put the water down deeply because moisture where the roots are may be completely depleted. The best way to do this is to use a hose-attached soil needle such as the Ross Root Feeder. It is not necessary to leave it in the ground for long periods of time but it should be moved short distances, leaving it in each spot perhaps no more than one-half minute. In this way you will distribute the water more evenly, but not tend to overwater the plant. Of course, if the ground is frozen solid, don't attempt to water.

Some garden centers are advertising the use of anti-desiccants to reduce winter drying in evergreens. Materials such as "Wiltpruf" and "Vapoguard" are frequently used in the nursery trade to reduce water loss during transplanting. Unfortunately, these materials are not as successful in the arid climate of Colorado as they are in the eastern and mid-western states. There is also a danger in the use of some of these when applied during cold weather because they may last too long, forming a film on the leaf surface and blocking the breathing pores (stomates) and not only cutting down water loss, but reducing respiration and photosynthetic activity as well. This can lead to injury to the plant caused by the suffocation not only of the tops, but can reduce food transport to the roots, resulting in starvation. If you have evergreens that tend to wind burn during the winter months, it is probably better to protect them with loose wraps of burlap or by erecting some kind of wind barrier, than it is to use the chemical anti-desiccants. If you do choose to use them, be sure to follow label directions precisely.

Cut vs. Live Christmas Trees

Each year this column has discussed the virtues of buying a cut Christmas tree as opposed to the purchase of a live tree. Live Christmas trees have seemed to become quite popular in this "ecological age" but the reader should be reminded that planting a live tree following the Christmas season is often a very difficult task and may result in not saving a tree, but rather wasting a natural resource. A lot depends on the weather conditions and how much preparation you do prior to the purchase of the tree. If you are contemplating using a live tree, prepare the soil now; digging the planting hole in a permanent location. Place the soil removed in an area where it will not be frozen. Be sure to cover the hole so that someone cannot accidentally fall into it.

A live tree should not be left in the home for more than about three days, otherwise it may start to break dormancy and will not be able to cope with the sudden change to cold temperatures when taken outside again. If the weather is bad following Christmas, take the tree to a cold location such as your garage, making sure to keep the soil slightly moist until there is a clear day to plant it outside. In the process of planting, it is a good idea to thoroughly mix in some coarse peat moss to improve aeration and drainage. Following planting, you should cover the surface with a

deep mulch such as wood chips or similar materials that will insulate the soil from a hard freeze. Avoid watering too frequently, keeping in mind that in the winter months soils do not dry out rapidly once they have become moistened because of the lower temperatures.

For those purchasing a cut tree, you will get much more satisfaction if you select from tree lots that have the fresh cut and if possible, native species. Many of the imported trees are cut as much as two months ahead of schedule and may be fairly dry. One way to check them is to stand them up and tap them firmly on the ground and watch for needle drop. Be wary of those trees that have been sprayed with colorant because this often masks the off-green color of trees that are getting too dry. Dry trees are not only a mess in the home, but a decided fire hazard. As to tree types, the best are the Scots Pine, Douglas-fir and true fir. Most spruce dry quickly and thus drop needles readily. The Douglas-fir and true fir will have a soft feel to the needles. Spruce will have sharp needles which are square in cross section. Douglas-fir and true fir have flat needles.

After you have purchased a cut tree it is best to saw off a portion of the base (six inches is enough) to expose a fresh cut and then plunge the base in a bucket of water until it is time to bring it indoors. This will help the tree to maintain freshness, providing you keep the tree in a shaded and cool location. An unheated garage or the north side of the building would be suitable. It is also a good idea to use a Christmas tree stand that has a container for holding water.

CSU Master Gardener Program

The Cooperative Extension Service of Colorado State University, is going into its 6th year with a most successful Master Gardener Program. This is a volunteer effort to help answer the growing needs for gardening information through the County Extension offices. It is a completely volunteer effort in which CSU specialists and county agents in horticulture and allied fields, give the participants 40 hours of training in exchange for 40 hours of their time. The participants assist the county offices throughout the state, particularly in the more populated areas in such things as answering gardening questions via telephone, assisting with community gardening, television and radio news releases, preparation of fact sheets and helping with garden center clinics.

Last year, CSU trained 125 volunteers and has 91 Advanced Master Gardeners from previous years. Many of the Advanced Master Gardeners also assist in training the new volunteers. It is estimated that the total volunteer effort was over 7,740 hours. This not only has saved tax dollars, but it has also increased the outreach of many of the counties in disseminating horticultural information.

If you are interested in this program, the training for next year will start on January 21, 1980. Counties offering the program are: Adams, Arapahoe, Boulder, Denver, El Paso, Jefferson, Larimer, Mesa, Otero, Pueblo and Weld. For further information and/or registration, contact your county extension office now. New registrations must be limited and deadlines are established by each county office. General information is also available by calling my office at 355-8306.

I hope you've all had a pleasant and successful gardening year. Merry Christmas and Happy New Year!

Dr. J. R. Feucht

Ideas for Christmas

New items in the Gift Shop include 8" x 24" posters and two sizes of canvas tote bags! These exciting objects all bear the handsome new logo and of course, our shop is the only place in town where they may be purchased.

Also DBG Gift Shop is the only place in the *state* where engravings by Frank R. Albrecht may be found. These three dimensional acrylic works of art provide a visual experience of the wonders of nature.

Perhaps you would like to make a donation in the name of a friend to Operation Wild Flower? This is a project to plant seeds along the various interstates in Colorado (see October newsletter). These tax deductible donations may be mailed to Mrs. Herb Franson, 6804 Dover St., Arvada 80004.

And Another Request . . .

When you are finished with your Christmas tree, remember we can use the boughs for mulch at the Gardens. Please bring the tree during the first week of January; you may leave it at the back alley gate of the Waring Community Garden, north of the Library. Each tree will be put to good use and will be much appreciated.

Thank You . . .

Our thanks to the Grampian Growers in Scotland, the St. Andrews Society of Colorado and Mr. Joseph S. Brown for the donation of 750 'Apeldoorn' tulip bulbs.

To keep you informed. . . .

The gate admission fee starting in January 1980 is still being discussed. However, members should plan on showing their membership cards for free admission; the charges for non-members as proposed will be \$1.00 for adults, 25¢ for children ages 7-15. Several free days will be scheduled throughout the year. Currently, booked tours will continue to be provided at no charge as a service to the community by our volunteers.

Classes

Conifers and Crafts for Christmas, a children's class, will be held on December 8 from 9 - 12 noon. The cost of \$4.50 includes material to make one decoration. As of this writing, 5 spaces remain.

Congratulations to:

Another of our volunteers, a guide and the Secretary of the Associates, Mildred Earhart, was featured recently in Farrar's People in the *Denver Post*. It is very nice that others recognize the merit of our volunteers too!

Chicken Little

The sky didn't fall but parts of the ceiling at the House did! At 2:30 a.m. on October 26th the guard on his rounds was surprised by pieces of plaster which fell on him in the dining room. No harm to him but the room will need extensive repairs. Of necessity all meetings which were scheduled at the dining room have been cancelled or moved for an indefinite period of time.

Free Film

The Garden of God, on December 7 at 1:30 p.m. in Classroom C will provide a brief, visual journey among the beautiful and varied plants mentioned in the Bible. The plants were photographed in the settings in which they appear in scripture and are accompanied by narration from the Old and New Testaments. All welcome.

Family Members

Well, the weather did not cooperate but everyone rallied 'round and the first event scheduled for the family members was a big success. The hay rack ride was not an appropriate event for Horticulture Hall, but the Cherry Creek High School cheerleaders led a rousing cheer for plants, pumpkins were decorated, children bobbed for apples, a community sing was led by Pam Hughes from DU, and great fun was had by all. A special thanks to The Cheese Company in Belcaro for prizes.

Another fete planned for this class of membership will be on December 16th and will feature music by members of St. John's Cathedral choir led by David S. Harris. Avalonne Kosanke will talk about the tradition of Christmas decorations that grace the tree at the Gardens. Each year she and her committee outstrip themselves in conceiving and creating the ornaments. Watch for your letter with more information on this exciting holiday event.

Quip from the Pennsylvania Horticulture Society
"Old gardeners never die — they just spade away."

Plan now to attend!

Associates who heard Dr. Oksana Ross give her multimedia presentation in October will want to be sure to attend the 5 sessions planned in January and early February. Starting on Saturday, January 5 at 1:30 p.m. and continuing each Saturday to February 9 Dr. Ross will discuss "Art in Nature". By the use of slides and appropriate musical selections played by Dr. Ross you will enjoy the representation of nature through masterpieces of art from the Renaissance and Leonardo da Vinci to the Twentieth Century and Georgia O'Keefe.

Tributes

In memory of Katharine B. Crisp
Esther and Ethel Briesemeister
Mr. and Mrs. Charles W. Miller

In memory of Margaret B. Horton for
Orchid Bromeliad House
Mr. and Mrs. E. B. Horton, Jr.

In memory of Kim Sterne
San Francisco Herb, Tea and Spice Trading Co.

In memory of Dr. Carl Tempel
The Associates of Denver Botanic Gardens
Crestmoor Park Garden Club
Margaret Sikes
Mrs. James J. Waring



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Springtime — 1980 — In The Desert

Our Southwest deserts, beautiful any season, are breathtakingly colorful when in bloom during the early Spring. This would be a good year to go see them! This is our first invitation to Members of Denver Botanic Gardens, including those who join before the trip, to participate in a week-long tour from April 12 until April 19 (Saturday to Saturday).

We are going to fly to Phoenix the first day and arrive early enough to do some touring that afternoon. Moras Shubert will be our guide, giving the participants the advantage of his many years of experience leading student field studies of the Arizona deserts and oases. We will also have a travel escort from the Travel Associates who will see to our comfort during the whole tour.

Briefly, here is what we will be doing and seeing: On Sunday we will travel to Superior to see a preview of the desert vegetation at the Boyce Thompson Southwestern Arboretum. We then return to Phoenix. Monday's tour will give us a view of the eastern extension of the Mojave Desert and a chance to see the ecologically mysterious palms in a canon of the Kofa Game Refuge. In miles, this will be our longest trip, and we will spend the night in Yuma. As always, we will be free to stop the bus for unexpected sights or beautiful views, because we will have plenty of time. Our short trip on Tuesday will take us to Gila Bend with a short side trip to Ajo. We will arrive early enough to see the amazing open pit copper mine there. Our Wednesday tour will be to the Organ Pipe National Monument where we will be right on the Mexican border and see an unspoiled sample of the Sonora Desert, including a real desert oasis lake, with the charming name Quitabaquito. After another night at Ajo, we will spend Thursday traveling to Tucson

through the Papago Indian Reservation which is a most scenic route. Two very exciting side trips are planned, and there will be ample opportunity to stop and take pictures while we appreciate the beauty of the landscape. Our two main events on Friday will be a visit to the Saguaro National Monument west of Tucson in the morning then a most appropriate and climactic summary of our whole tour at the Arizona Sonora Desert Museum which is internationally known for its excellent collection of desert flora and fauna.

Our bus will take us back to Phoenix on Saturday morning for an early afternoon flight back to Denver.

We are arranging this tour on a "shoe-string" budget, so in order to give each participant more freedom of choice, breakfasts and dinners are not included in our package price. Most days we will carry box or bag lunches, but all lunches will be included on bus tour days so we can "picnic" along the way. For those who fear second hand smoke on buses, we will have no smoking while on the bus. This will not inconvenience the smokers, as there will be ample opportunity to "light up" when off the bus (but we must be careful not to start any fires or leave any litter).

We will be limited to approximately 30 participants, so it will be necessary to reserve spaces on a "first come first served" basis. Your inquiries and reservations should be directed to Mrs. Judy Albright at Travel Associates, phone 759-8666 or by mail to Travel Associates, 7007 East Hampden, Denver 80224. Please do not try to make reservations at the DBG office, as Mrs. Albright is handling all these details. She will be glad to give you answers to your questions, and will send out the itinerary, and all pertinent information with just a call.

For any who might wonder, this will be a tour for anyone who is interested, and the information will be as non-technical or technical as each individual desires. There will be no strenuous hikes, but there will be enough opportunity to walk to make it important to have some comfortable walking shoes.



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Green Thumb Newsletter



Number 80-1

January, 1980

Of Dreamers and Doers: The Future of the Denver Botanic Gardens

I have come to the conclusion that our fair city of Denver must have always been a great place for dreams and dreamers. It seems to me that one of the more important factors in the rise of our town to its present pre-eminence has been the special attraction Denver fortunately has had for men and women who had great visions of what could be accomplished here, and who devoted their energies and abilities to the realization of their dreams for themselves, for their fellow men, and for their city. The scraggly little settlement of 1859 at the confluence of Cherry Creek and the South Platte River has grown and matured to become the flourishing center in the Rocky Mt. West of not only government and commerce, but also of tourism, education, agriculture, transportation, scientific research, the arts and the humanities, and *now* the development of vast energy sources. Admittedly, strategic geographic location, a favorable climate and a generous allotment of natural resources have also been involved in this success story, but what would they have amounted to without the dreamers and the doers of great works who have been inspired by those dreamers?

One of the more unique visions for Denver's future was the establishment of the Denver Botanic Gardens in 1951. This was the realization of a dream cherished by a small group of public-spirited citizens who dared to believe that their interest in horticulture and their love of plants might some day take the form of beautiful gardens which would become a source of pleasure to everyone as well as a center for the promotion and expansion of horticultural knowledge and practices. At this point let me acknowledge the great debt of gratitude all of us concerned with the Botanic Gardens today know that we owe to those who have preceded us; and to those also, who with us today give so generously of their energy, time and sustenance to insure that we shall reach the goal of building a GREAT Botanical Garden on the Western High Plains.

Some of the more significant landmarks achieved at the Botanic Gardens during 1979 are the following: Establishment and dedication of Shofu-en, the beautiful "Pine Wind Garden" in the classical Japanese tradition, under the leadership of Prof. Koichi Kawana; construction of the Rock-alpine Garden designed by Mr. Herbert Schaal, our consulting landscape architect from EDAW, Inc.; construction, now well under way, of the new Orchid-Bromeliad Display House, designed by Mr. Victor Hornbein; beginning of construction of the Scripture Garden, a generous gift from Mrs. Holly Coors, designed by Jane Silverstein Ries; commencement of construction

of a Home Demonstration Garden which is being given by the Garden Club of Denver, and designed by Mr. Charles Randolph; starting the construction of the Alpine House, a completely temperature-controlled small greenhouse for the growth and display of rare and exotic alpine and rock garden plants which cannot tolerate the outdoor garden temperatures in Denver, designed by Architect Kelly Oliver and donated through generous gifts of The Associates of Denver Botanic Gardens; establishment of the Garden's first Perennial Border Gardens, along both sides of the north section of "Linden-Allee", designed and implemented by Mr. Andrew Pierce, Mr. Merle Moore, Mrs. Phil Hayward and Mrs. William Jackson; selection of the Denver Botanic Gardens as the fifth site in the United States for a Miniature Rose Test Garden, by the American Rose Society — the new test garden has been prepared along the north boundary of the present AARS Test Garden.

There were other noteworthy happenings at the Gardens in 1979. DBG was host to the annual National Conference of the American Association of Botanic Gardens and Arboreta. One hundred thirty-five representatives from all sections of the United States, and Canada participated in a busy program that was built around the theme of funding of botanical gardens and arboreta. The meeting was headquartered on the campus of the Colorado Women's College, and took place during the hottest weather of the summer. Those participating considered it highly successful, however. The Committee on Arrangements was co-chaired by Miss Margaret Sikes and Mr. Andrew Pierce; Ms. Beverly Nilsen, Ms. Iris O'Connor, Mr. Merle Moore and Dr. William Gambill also served.

Indicative of the rapid growth of the program of the Denver Botanic Gardens is the creation by the Board of Trustees of the new position of Director of Development in 1979. One of the major functions of this position is making contact with previously unsolicited sources of funding, and raising of monies to supplement the Botanic Gardens budget. Mr. Robert H. Dodge of Denver was appointed by the Board to fill this position. He is assisted by Ms. Kay Fischer, secretary.

During 1979 it became clear that the Denver Botanic Gardens was passing from the period of its "childhood" and was entering its "adolescence" as an institution. The implementation of dreams and visions appears easy enough, but the doers were facing the hard facts of a shrinking operating budget from the City and the melting away of both capital and operating funds resulting from an inflationary rate calculated for the year at between 13% and 15%. As growth at the Gardens had occurred, there had been a startling increase in costs of operation. In addition to establishing an Office of Development, the Board of Trustees decided, after considerable study, to set charges for admission to the Gardens beginning in 1980, and a schedule of fees to be assessed for the use of Botanic

(Continued back page)

Classes

If we could harness the energy of children, we'd have all our problems solved! Become a guide and watch their interest as you point out a bunch of bananas or explain the mechanics of a Venus fly trap. Sign up for *Tropical Plants of the Conservatory* from January 9th to March 12, 1-3 p.m., Classroom C and Conservatory. The class costs \$25.00 which is refunded if a student guides for 40 hours.

Mrs. Nelms' schedule now permits her to teach *Botany for Gardeners*. In the 14th century, John de Dondis wrote: "We are born and placed among wonders and surrounded by them, so that to whatever object the eye first turns, the same is wonderful and full of wonders, if only we will examine it for a while." Examine some of these with us by signing up for this class. It starts on January 17 and continues through February 21, 10 to 12 noon, Classroom B. The cost is \$18.00 for members, \$22.50 for non-members.

A perennial favorite, *Landscape Horticulture for Home Owners* will begin at 7:30 p.m. on January 22nd and continue each Tuesday evening until February 19 in Classroom C. Topics to be covered by Mr. Rollinger and Mr. Watson include design principles, plant usage and maintenance of the finished product. The cost is \$15.00 for members and \$22.50 for non-members. Limit 50.

Finally get your name in now for *Cold Frames, Hot Beds* on January 24 at 9:30 a.m. in the propagation room. Our plant propagator will help you get a head start on spring planting. Free but limited to 15 people.

Remember when you come for a class be sure to mention your name to the person on duty at the gate. If you have signed up, you will be admitted without charge. (Of course, members just need to show their cards for free admission at all times.)

Gardening Tips for January

Houseplant Care

This column has already mentioned ill houseplants incur during the winter months, mostly as the result of lower humidity when the furnace is turned on. It is a good idea to keep your houseplants on the dry side in order to keep them slowed down in growth. This will reduce the demands of the plant and it will be better able to cope with lower humidity and lower light conditions. Poinsettias are a popular plant this time of year and they too should be kept pretty much on the dry side. Poinsettias are also very sensitive to cold drafts of air or even sudden changes in warm temperatures. It is best to keep them away from direct sunlight and from heat outlets as well as from doorways.

Dr. J. R. Feucht

Thought for dark days

Although the world's first trouble spot was a garden and the first person to be murdered was a gardener, generally these are peaceful spots inhabited by peaceful people. (If Cain had done some double digging, he would have had little time or strength for anything else!)



*Kalanchoe
Coral Bells*



*Double Fibrous Begonia
Park's Jewelite*



Poinsettia



*Cyclamen
(Gypsy)*

Calendar of Events



January, 1980

January, 1980

- | | | | |
|------|--------------|---|---|
| 2)* | 1:30 p.m. | Botanic Gardens House – Main Room | Propagation Committee Meeting |
| 2)* | 4:00 p.m. | Botanic Gardens House – Main Room | Planning Committee Meeting |
| 3)* | 9:00 a.m. | Botanic Gardens House – Main Room | Front Range Extension Agents Seminar |
| 3)* | 9:30 a.m. | Education Building – Classroom “B” | Central District Presidents Council |
| 3)* | 11:00 a.m. | Education Building – Classroom “A” | Horticulture Training Center – C.A.R.C. |
| 3) | 7:00 p.m. | Education Building – Classroom “B” | Colorado Open Space Council |
| 3)* | 7:45 p.m. | Education Building – Horticulture Hall | Denver Orchid Society |
| 5)* | 9:30 a.m. | Education Building – Classroom “B” | Gloxinia Gesneriad Growers |
| 5) | 1:30 p.m. | Education Building – Horticulture Hall | “Art in Nature” – Dr. Oksana Ross |
| 7) | 7:00 p.m. | Education Building – Classroom “A” | Center for Biological Self Sufficiency |
| 8)* | 12:00 noon | Education Building – Herbarium | Herbarium Committee Meeting |
| 8)* | 1:00 p.m. | Education Building – Classroom “B” | Colorado Women’s Conservation Club |
| 8)* | 1:00 p.m. | Botanic Gardens House – Main Room | Editorial Committee Meeting |
| 8)* | 4:00 p.m. | Botanic Gardens House – Main Room | Executive Committee Meeting |
| 8)* | 7:30 p.m. | Education Building – Classroom “B” | Denver Bonsai Club – Board Meeting |
| 9)* | 10:00 a.m. | Botanic Gardens House – Main Room & Kitchen | DBG Guild |
| 9)* | 1:00 p.m. | Education Building – Classroom “C” and | “Tropical Plants of the Conservatory” – |
| | 3:00 p.m. | Conservatory | Mrs. Peg Hayward |
| 9)* | 1:30 p.m. | Botanic Gardens House – Main Room | P.R. & Development Committee Meeting |
| 9)* | 1:30 p.m. | Botanic Gardens House – Dining Room | Propagation Committee Meeting |
| 9)* | 3:30 p.m. | Botanic Gardens House – Main Room | Chatfield Horticulture Advisory Sub-Committee Meeting |
| 9) | 6:30 p.m. | Education Building – Classroom “B” | American Rock Garden Society |
| 9) | 7:30 p.m. | Education Building – Classroom “C” | Colorado Open Space Council |
| 12) | 1:30 p.m. | Education Building – Horticulture Hall | “Art in Nature” – Dr. Oksana Ross |
| 15)* | 12:30 p.m. | Botanic Gardens House – Main Room | Rocky Mountain African Violet Council |
| 15)* | 1:00 p.m. - | Education Building – Horticulture Hall – | Special Libraries Association – |
| | 8:00 p.m. | Classroom “C” | Colorado Chapter |
| 15)* | 4:00 p.m. | Botanic Gardens House – Main Room | Travel Committee Meeting |
| 15)* | 7:30 p.m. | Education Building – Classroom “B” | Denver Bonsai Club |
| 15)* | 7:30 p.m. | Education Building – Classroom “A” | Denver Audubon Society |
| 16)* | 12:00 noon | Education Building – Classroom “B” | Colorado Garden Show, Inc. |
| 16)* | 1:00 p.m. - | Education Building – Classroom “C” and | “Tropical Plants of the Conservatory” – |
| | 3:00 p.m. | Conservatory | Mrs. Peg Hayward |
| 17)* | 10:00 a.m. - | Education Building – Classroom “B” | “Botany for Gardeners” – Ms. Betsy Nelms |
| | 12:00 noon | | |
| 17)* | 4:00 p.m. | Botanic Gardens House – Main Room | Chatfield Committee Meeting |
| 17) | 7:30 p.m. | Education Building – Classroom “A” | Denver Audubon Society |
| 17) | 7:30 p.m. | Education Building – Classroom “B” | Indoor Light Gardening Society |
| 18) | 7:30 p.m. | Education Building – Classroom “C” | Denver Botany Club |
| 19)* | 9:00 a.m. | Education Building – Classroom “B” | Hi Country Judges Workshop |
| 19) | 1:30 p.m. | Education Building – Horticulture Hall | “Art in Nature” – Dr. Oksana Ross |
| 22)* | 12:00 noon | Education Building – Herbarium | Herbarium Committee Meeting |
| 22)* | 4:00 p.m. | Botanic Gardens House – Main Room | Board of Trustees Meeting |
| 22) | 7:30 p.m. | Education Building – Classroom “A” | Colorado Gladiolus Society |
| 22)* | 7:30 p.m. | Education Building – Classroom “C” | “Landscape Horticulture for the Home Owner” – |
| | | | Mr. Rollinger, Mr. Watson |

Calendar of Events for January (Continued)

23)*	9:15 a.m.	Education Building – Classroom “A”	Applewood Knolls Garden Club
23)*	11:30 a.m. - 1:00 p.m.	Botanic Gardens House – Main Room	Grounds Maintenance Supervisors
23)*	1:00 p.m. - 3:00 p.m.	Education Building – Classroom “C” and Conservatory	“Tropical Plants of the Conservatory” – Mrs. Peg Hayward
23)*	1:30 p.m.	Botanic Gardens House – Main Room	Propagation Committee Meeting
24)*	9:30 a.m.	Education Building – Classroom “A”	African Violet Club of Denver
24	9:30 a.m.	Education Building – Propagation Room	“Cold Frames, Hot Beds” – Mr. Dick Schimming
24)*	10:00 a.m.	Education Building – Classroom “B”	“Botany for Gardeners” – Ms. Betsy Nelms
24)*	10:00 a.m.	Botanic Gardens House – Main Room	Around the Seasons Club
24)*	3:00 p.m.	Botanic Gardens House – Main Room	Horticulture Advisory Committee Meeting
24)*	7:30 p.m.	Botanic Gardens House – Main Room	Denver Men’s Garden Club
25)*	9:00 a.m.	Horticulture Hall	Ikebana International
26)	1:30 p.m.	Education Building – Horticulture Hall	“Art in Nature” – Dr. Oksana Ross
28)*	9:30 a.m.	Botanic Gardens House – Main Room	Ultra Violet Club Meeting
28)*	7:30 p.m.	Education Building – Classroom “B”	The Nature Conservancy
29)*	7:30 p.m. - 9:30 p.m.	Education Building – Classroom “C”	“Landscape Horticulture for the Home Owner” – Mr. Rollinger, Mr. Watson
30)*	1:00 p.m. - 3:00 p.m.	Education Building – Classroom “C” and Conservatory	“Tropical Plants of the Conservatory” – Mrs. Peg Hayward
30)*	1:30 p.m.	Botanic Gardens House – Main Room	Propagation Committee Meeting
31)*	10:00 a.m.	Education Building – Classroom “B”	“Botany for Gardeners” – Ms. Betsy Nelms
February			
1)*	11:00 a.m.	Botanic Gardens House – Main Room	Civic Garden Club
1)*	12:00 noon	Education Building – Classroom “A”	Hi Hopes Study Club
2)*	9:30 a.m.	Education Building – Classroom “B”	Gloxinia Gesneriad Growers
2)	1:30 p.m.	Education Building – Horticulture Hall	“Art in Nature” – Dr. Oksana Ross
2)	1:30 p.m.	Education Building – Classroom “C”	Slides of Arizona – Dr. Moras Shubert
4)*	7:00 p.m. - 9:00 p.m.	Education Building – Classroom “A”	“Container Gardening” – Mr. John Brett
4)	7:00 p.m.	Education Building – Classroom “C”	Center for Biological Self Sufficiency
5)*	9:30 a.m.	Education Building – Classroom “C”	“Introduction to the Japanese Tea Ceremony” – Mr. Kim Thrasher
5)*	1:00 p.m.	Botanic Gardens House – Dining Room	Editorial Committee Meeting
5)*	7:30 p.m.	Education Building – Classroom “B”	Denver Bonsai Club
5)*	7:30 p.m.	Education Building – Classroom “C”	“Landscape Horticulture for the Home Owner” – Mr. Rollinger, Mr. Watson
6)*	9:00 a.m.	House Parking Lot	Field Trip to the Frank Paxton Lumber Co.
6)*	1:00 p.m. - 3:00 p.m.	Education Building – Classroom “C” and	“Tropical Plants of the Conservatory” – Mrs. Peg Hayward
6)*	1:30 p.m.	Botanic Gardens House – Dining Room	Propagation Committee Meeting
6)*	4:00 p.m.	Botanic Gardens House – Dining Room	Planning Committee Meeting
7)*	10:00 a.m.	Education Building – Classroom “B”	“Botany for Gardeners” – Ms. Betsy Nelms
7)	7:00 p.m.	Education Building – Classroom “B”	Colorado Open Space Council
7)*	7:45 p.m.	Education Building – Horticulture Hall	Denver Orchid Society
9)	All Day	Education Building – Horticulture Hall	African Violet Sale – Hi Hopes Study Club
			OPEN TO PUBLIC: 10:00 - 4:30

**Members or Enrollees Only*

LIBRARY LINES

VOL. 2 - NO. 6
JANUARY 1980

A BIMONTHLY NEWSLETTER OF THE HELEN FOWLER LIBRARY OF DENVER BOTANIC GARDENS

The holidays are over. Winter has comfortably settled itself as our companion for awhile, the time is ideal to plan the garden. In this issue of *LIBRARY LINES*, John Brett has reviewed several books on vegetable gardening to inspire you to greater accomplishments or perhaps to appease the desire to get out there to work the soil.

John Brett is the Community Gardens Coordinator at Denver Botanic Gardens.

Lovelock, Yann. *THE VEGETABLE BOOK, AN UNNATURAL HISTORY*. New York, St. Martin's Press, 1972. \$10.00. SB 320.5 L684.

Anyone with more than a passing interest in food plants would do well to investigate this book. Contained herein are hundreds of entries describing many vegetables, not only the day-to-day vegetables we are all used to but many others such as chickweed (*Stellaria media*), rampion (*Campanula rapunculus*) and edible sedges.

His treatments are as fascinating as they are accurate. Incorporated within the discussion of each of the food plants is a botanical description, its likely region of origin, common names, travels abroad and innumerable stories, anecdotes and poems.

Plant the bean when the moon is light.
Plant the potato when the moon is dark.

Set garlic and beans on St. Edmund the King.
The moon in the wane, thereon hangeth a thing.

Sow peas and beans in the wane of the moon.
Who soweth them sooner he soweth too soon.

If you have a question about the history of cabbages or wish to know which seaweeds are edible or simply wish to increase your plant trivia, this is the book to start with.

Thurber, Nancy and Gretchen Mead. *KEEPING THE HARVEST, HOME STORAGE OF VEGETABLES AND FRUIT*. Charlotte, Vt., Garden Way, 1976. \$6.95. TX 601 T587.

The last ten years have seen a plethora of food storage books. Of those I have used or seen, this is among the best. It is written in a concise, easy-to-read manner and includes many helpful hints and charts. A great deal of information can be presented

in a well-organized chart. Important points and concepts are well illustrated with photographs and line drawings.

Advantages and disadvantages of each method are dealt with adequately and should enable the novice to choose the best method(s) for her/his particular situation. This book is by no means limited to the amateur in the kitchen. It covers such diverse areas as canning and freezing of citrus fruit, curing with salt (sauerkraut) and common storage of grains, squashes, root crops, etc.

One area not mentioned at all is the preservation of meat and meat products, a positive omission as most of us "city folk" are not likely to devote much of our time to the butchering of hogs, making sausage, filets or bacon.

Steffeck, Edwin F., editor. *HOME GROWING*. New York, St. Martin's Press, 1977. \$15.95. SB 322 H664.

There are many books that claim to be complete guides to ... but usually fall far short of that objective. Here is a book which makes no such lofty claims but very nearly is a complete guide. Designed for use by beginning gardeners, this book also has a good deal of valuable information to offer to the experienced tender of plants.

While this is a rather large book, succinct is probably the most accurate descriptive word to be applied. The book is divided into two sections. The first is entitled *A TO Z GROWING GUIDE* and covers about 145 fruits, vegetables and herbs (Angelica, bean sprouts, cardoon, quince, radish), in a manner that is brief but highly informative and accurate. Each of the food plants contained within this section receives a thorough treatment covering botanical information, hardiness, length of time to harvest, yield, planting, watering, soil needs to cover eventually nearly all of the cultural needs of the plant. The second section is entitled *BASIC GARDENING GUIDE* and deals with topics of importance to beginning gardeners: garden design, crop rotation, choosing the best varieties, tools, soil improvement fertilizers, cloches and frames and numerous other valuable topics.

If you are considering food gardening or are an experienced gardener wanting to try new and different fruits and vegetables, this would be a good first source to check.

Jeavons, John. *HOW TO GROW MORE VEGETABLES*. Palo Alto, Calif., Ecology Action of Mid-peninsula, 1974. \$4.00. SB 321 J439.

"The biodynamic/French intensive method of horticulture is a quiet, vitally alive art of organic gardening which relinks man with the whole universe around him - a universe in which each of us is an interwoven part of the whole. Man finds his place by relating and cooperating in harmony with the sun, air, rain, soil, moon, insects, plants and animals rather than attempting to dominate them. All these elements will teach us their lessons and do the gardening for us if we will only watch and listen. We each become gentle shepherds providing the conditions for plant growth."

Thus begins this primer on the biodynamic/French intensive method of gardening. In this book Mr. Jeavons not only condemns traditional farming and gardening practices but also offers what he feels to be a viable alternative.

The key to biodynamic/French intensive gardening is the extensive use of compost and raised beds which are, ideally, prepared to a depth of 24 inches. This preparation is accomplished by double digging and the addition of large quantities of organic matter as a balanced nutrient source. Raised beds in this instance are not bordered by wood or other materials as is usually associated with the concept of raised beds. Rather, as the soil is prepared and the compost added, air and additional humus are incorporated into the soil thereby adding to its depth. Garden design is such that the gardener can reach any part of a given bed without stepping on it. By not compacting the soil around the plant roots, the plants are under less stress and produce more and higher-quality produce. Planting is such as to allow the greatest production from the least amount of space.

Nearly every step and concept of biodynamic/French intensive gardening is explained and more importantly justified according to the tenets of the philosophy. If you're looking for an alternative to the usually espoused methods of gardening or wish to get a radically different viewpoint on the operation of a garden, this is an excellent book providing excellent directions.

Faust, Joan Lee. *THE NEW YORK TIMES BOOK OF VEGETABLE GARDENING*. New York, Quadrangle, 1975. \$9.95. SB 321 F388.

This is a very good example of a "how-to" vegetable gardening book. In it can be found all the basics of vegetable gardening

presented in a readable, easily understood manner.

Information is provided on soils, tools, planting and cultivating, description of common vegetables and their culture, plus most of the other knowledge needed to grow vegetables.

Included in the cultural section for each vegetable is information on climate requirements, varieties, soil conditions and planting needs.

This is a good book for a beginner.

Riker, Tom and Harvey Rottenberg. *THE GARDENER'S CATALOGUE*. New York, William Morrow, 1975. \$6.95. SB 453 G3745.

If you can think of a food gardening topic, chances are you can find something of value on the subject in this compendium of food gardening knowledge. All of the usual information is here plus a great deal more than is commonly available in a single source. The presentation of the material is what sets this book apart from most other gardening manuals. Many of the illustrations are from 19th century publications and are in themselves informative and fascinating. When was the last time you saw a cutaway view of a convenient duck house or a celery pit or perhaps you've been wondering what an Aphis brush or wasp catcher looks like? They're all here and dozens of others as well.

The articles presented are in many cases excerpted or reprinted from other sources (with permission), as diverse as 1905 editions of *GARDEN MAGAZINE*, USDA publications, *ORGANIC GARDENING AND FARMING*, and *FRUIT CULTURE* of 1885. They cover all of the usual topics: growing beets, carrots, corn, etc. plus the culture of fruit, common and exotic, greenhouse growing, artificial light gardening, indoor and outdoor container culture and food storage.

The final ten pages are perhaps the most valuable of the entire book for they contain sources of information. There is a Buyer's Guide listing over 400 addresses for seed, nursery and canning supplies catalogs. A bibliography precedes the index which is a highly useful tool in a book that at times seems not to have a logical order.

This is a browser's delight particularly in January when reading about gardens and gardening is as close as one can get to the real thing. This is a particularly good time to pay closer attention to one's house plants. The library possesses large numbers of books on vegetable gardening and on house plants. Now is the time to plan, to read, to dream about the perfect vegetable which can be started mentally now.

New Zealand Sojourn

"The most congenial group" of 29 travelers has just recently returned from the lands of the kiwi and the koala. Although the main purpose of the tour, sponsored by the Denver Botanic Gardens, was to see the very different flora of the southern hemisphere in Rarotonga, New Zealand and eastern Australia, there were new items of interest for the entire group continually throughout the 25 days of the trip.

For the botany enthusiasts we saw in the hills near Auckland the *Tmesipteris* (silent "T") considered, along with *Psilotum*, as the most primitive of living vascular plants. There is a *Psilotum* in the Conservatory.

Most of the botanical gardens visited along the way had followed the usual procedure of importing flora from all over the world, such as *Davidia* and *Ginkgo* from China, the monkey puzzle from Chile, the tulip tree from eastern North America and China, rhododendrons mostly from the northern hemisphere and redwoods from California. Lupines from North America have become naturalized and are becoming a nuisance — although they are beautiful. Scotch Broom and gorse have already done this and nasturtiums from South America may soon follow.

Thanks to the expert knowledge of Andrew Pierce we were able to single out the native varieties. At Otari Native Plant Reserve in Wellington, N.Z. we visited an area devoted strictly to New Zealand flora where *Hebes* were featured along with the native "Flax" or *Phormium tenax*. This plant was used in the past by the native Maoris for making rope and other types of weaving.

On the North Island we visited the well heads of the world's second geothermal power station, Wairakei. We stayed overnight at Lake Taupo, largest in New Zealand, caused by a prehistoric explosion of a volcano. The headwaters from the surrounding snow-covered volcanos give rise to the start of the longest river in New Zealand, the Waikato River, which is extensively used for hydro-electric power.

On South Island we visited the only castle in the southern hemisphere at Dunedin. From there we went through glacial country to Queenstown, seeing on the way remains of the early Chinese gold rush of the 1860's. We visited the private garden of Mr. Gardner, retired horticulturist, overlooking Lake Wakatipu where the red osier dogwood reminded us of home. Mt. Cook National Park gave us a close-up look at the Southern Alps which have been rising and eroding at about the same rate for 10-million years.

In Sydney, Australia we had a delightful visit to the private garden of Mrs. Ann Williams-Clark and an evening of relaxation with the dramatic performance of "Don Quixote" by the Australian Ballet Company at the Sydney opera house. Later we visited tropical volcanic islands inside the Great Barrier Reef.

There was so much to see that there will be at least 29 different versions of the trip by the various participants when they recover from the shock of returning to blocked streets and highways and 9° temperatures.

Lu Long

(Editor's note: Wouldn't you like to have such an opportunity to travel with the Gardens? You can — watch for announcements from the Travel Committee and do remember our next trip to Arizona in April.)

Art in Nature

One of the best ways to start the new year will be to attend Dr. Oksana Ross' multi-media presentations on Saturday afternoons, January 5 to February 2 from 1:30 - 3:30 in Horticulture Hall. By carefully chosen slides and appropriate musical selections, Dr. Ross will illustrate how different artists at different times viewed nature.

Compare Leonardo's drawings of plants to Giorgione's landscapes of Vermeer's serene view of seventeenth century Holland and Watteau's poetic French setting. Contrast the romantic excitement of Turner's seascapes and the arts of the French impressionists. Enjoy Monet's Giverny gardens in all their variations of glorious color. Feel Van Gogh's virility in his sunflowers, Cezanne's majesty in the St. Victorie studies, the "joie de vivre" of Matisse, the watercolors of Emil Nolde. Discover the depiction of nature in America from the Hudson River School romanticism to contemporary reflections on nature by Andrew Wyeth and Georgia O'Keefe.

The final meeting on February 9 will provide an opportunity to tour the Denver Art Museum with Dr. Ross as guide. Everyone is invited to all or any sessions that may fit your schedule. Tell your friends and bring a group to these outstanding lectures.

Again Congratulations!

Mary DeLill, library and gift show volunteer, won the Minori Yasui Community Volunteer Award for the month of December. She was nominated by Sewall Rehabilitation Center for this well deserved honor.

Tributes

For Japanese Garden

The Oriental Garden Club

In memory of I. W. Stoddard

Mr. and Mrs. Alan F. Huggins



Reminder

Please remember we can always use books for the Book Sale. We collect all year around so that we may present the best possible selection for you in May. All types — poetry, nature, novels, mysteries, children's books — are needed. Thanks so much for your help.

And we can use old Christmas tree boughs for mulch. Please bring them to us the first week of January. Pile them at the back gate near the Waring Community Garden, north of the Library. Thanks a bunch.



Denver Botanic Gardens, Inc.
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Denver, CO

Gardens' facilities. These changes are subject to approval of the Denver City Council.

Plans to establish the Chatfield Arboretum, some twenty miles distant from the Gardens, have been moving into the area of implementation. In 1979 the firm of W. W. Wheeler and Associates produced an Irrigation Master Plan for the Chatfield project. The plan was accepted by the Board of Trustees, and for implementation in phases in the coming years. Discussions by City officials and action by the Denver City Council cleared the way for the establishment of contracts to carry out the improvements at Chatfield authorized in a matching fund grant of \$60,500.00. This grant was received earlier from the Colorado Land and Water Fund through the Heritage Conservation and Recreation Service of the U.S. Department of the Interior.

Funds from The Denver Foundation grant provided for incorporating two previously purchased lots on Josephine Street into the Community Garden area. Money from the same grant supported the drafting of a conceptual design for the entire Community Gardens Square. This design was accepted by the Board of Trustees. An earlier matching fund grant proposal from the Colorado Land and Water Fund in the amount of \$155,000 for the Community Garden Square project was revised to permit use of the grant in 1980.

Both dreamers and doers like to visit other parts of the world to inspect gardens and see exotic plants. In 1979 the Botanic Gardens sponsored a ten-day Botanical Study Cruise to the Galapagos Islands. From March 15-April 9 another group from the Gardens enjoyed a visit to parts of India, Nepal and Pakistan during a twenty-five day tour, "Beyond the Lost Horizons". A tour of gardens of the South Pacific featured a stop in Rarotonga, a rather extensive tour of New Zealand, followed by an optional visit to Australia.

Clearly, the Denver Botanic Gardens owes its beginnings to dreamers, and its progress to those who both "dream" and "do". To all those who participated in these processes in 1979, I express my deepest appreciation: City Officials, members of the Board of Trustees, members of the Staff, Members of the Botanic Gardens, and hundreds of volunteers. With your dreams and deeds the Denver Botanic Gardens is beginning to come of age and be a vital force in the Metropolitan community. With your continued support and good will, the Gardens will negotiate successfully the stormy economic weather and will continue to provide an ongoing facility which will surpass our greatest dreams for it.

Let me join in wishing all of you a most prosperous and productive New Year. We look forward to your continuing cooperation in fulfilling all of our dreams for the Denver Botanic Gardens.

William G. Gambill, Jr.

New Award

We are pleased to announce that the Denver Botanic Gardens recently won an "Award of Excellence" for imaginative use of wood in the outdoor gardens. Also cited were Herb Schaal of EDAW, Inc., in Ft. Collins and Komoi Construction Company, Nagoya, Honshu, Japan. This award was presented by W.O.O.D. Inc., a non-profit organization created to further the use of wood. The comments of the jury were: "From subtle redwood patio areas to large gazebos and pergolas, and finally a Japanese Garden complete with a gate, bridge and garden or tea house, the challenges were superbly met."

Botany Club

Lee Barzee and Paul Sandoz will jointly present a program on Colorado Mushrooms on January 18, at 7:30 p.m. in Classroom C. All welcome.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$15.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 575-2547.



Green Thumb Newsletter



Number 80-6

June, 1980

Welcome

Two new staff members have recently started work.



Mr. Kay Kawahara will be working in the Japanese Garden



and Mr. Panayoti Callas is the new Curator of the Rock-Alpine Garden.

Stop by and introduce yourself to them.

Denver Bonsai Club Show and Exhibition

June 14-15, 9 - 5 p.m.
1005 York Street

SOUTHERN COLORADO TOUR

The Arapahoe Rose Society is sponsoring a bus tour of the Santa Fe Trail country of southern Colorado on Saturday, the 12th of July. The tour will be a trip back into history as we trace our historic and botanic heritage along the Colorado Piedmont.

We will follow the path of Indian hunters, Spanish cavalymen, trappers, traders, military explorers, railroad men, stockmen, and miners, as we make our way to the Baca-Bloom Pioneer State Museum in the old town of Trinidad, Colorado. The Baca-Bloom Museum has managed to capture and preserve much of the excitement of life on the old Santa Fe Trail. One of the most delightful features of the museum is the Victorian Rose Garden containing a wide variety of 19th century roses, herbs, and other plants brought into the wilderness by those early pioneers.

Leaving Trinidad, we will travel across the wildflower painted prairie, stopping to visit some of southern Colorado's lovely gardens. The day will be topped off with a hearty chuckwagon dinner and the fantastic western show at the Flying W Ranch near the Garden of the Gods in Colorado Springs.

The tour is open to all. Cost of the all day tour (including transportation, refreshments, admission to museums, dinner, and show) is \$27.00 for adults and \$17.00 for children under 12. For further information and reservations call Stephen Brown, 795-3080.

Tributes

In memory of James D. Hickey

Mr. and Mrs. Theodore A. Boerstler

In memory of Kathryn Kirgis

Mrs. F. V. Altvater

Donations have been received from the following friends:

Around the Seasons Club
Bow Mar Gardeners
Cherry Hills Heights Garden Club for library books
Colorado Garden Show, Inc.
Crestmoor Mile High Gardeners for Education Fund
Garden Club of Denver for Home Demonstration Garden
King Soopers
Larry Latta for orchids
Pepsi Cola Bottling Company of Denver
The Pine Cone Club
The Rocky Mountain African Violet Council
Ultra Violet Club
William Thurston
The Tremont Foundation, Inc.
Dr. James M. Weiss
Winston Downs Garden Club

Reminder

The tea house in the Japanese Garden will be open on June 7 from 10 to 12 noon.

DESERT IN BLOOM TOUR IN ARIZONA

Early on April 12th, 30 members of Denver Botanic Gardens met in the Frontier VIP room at Stapleton Field. There were 21 from the Denver area, others from Boulder, Conifer, Colorado Springs, Estes Park, Dillon, and Pine. The South was represented by one from North Carolina and one from Mississippi.

The group was most fortunate to have Dr. Moras Shubert as our distinguished guide. Few have his knowledge of the arid Southwest and its flora. Besides that competency he is always cheerful and fun, and made a first class "red cap" when needed. He and the Travel Representative from Travel Associates, who met us in Phoenix, saw that we had appetizing box lunches and cold drinks every day — most welcome when traveling by bus through the desert.

On Sunday, April 13th, we boarded the bus we were to travel in for the next week. Our good natured bus driver, Joe Castro, was very gallant to the ladies, and very proud of his Mexican heritage.

We went to the Boyce Thompson Southwestern Arboretum, 60 miles east of Phoenix at Superior, Arizona. There we were met by Dr. Carol Crosswhite, one of its competent and interesting employees, who gave us a history of the Arboretum and explained it was created in 1927 "as a museum of living plants to help instill in mankind an appreciation of plants." It is a study area and nature preserve and has a collection of over 1200 different species. She then gave us a complete tour of the Arboretum. We saw numerous specimens of cactus and agaves in the dry rocky areas and shady groves of huge trees such as cypress and some eucalyptus in the more moist areas. There were several endangered species which the Arboretum is successfully saving. Two of the interesting and strangest were the Boojum, sometimes named an "upside down tree," which has a tapering silhouette, and the Jojoba. Much experimentation is being done with the Jojoba. It was discovered to contain a liquid wax which can be used as a substitute for whale oil. It has many other uses such as in plastics, foodstuffs, cosmetics, etc. The fact that it makes a wonderful shampoo made us all want some.

The Arboretum is a picturesque and beautiful area, reserved for Botanical Research, and worth an extended visit.

Another interesting area was the Kofa National Wildlife Refuge which consists of 660,000 acres of desert environment, managed by the U.S. Fish and Wildlife Service. We were sorry not to see any of the bighorn sheep, mule deer, doves, quail, reptiles, etc. who live there (I'm sure none of us missed the reptiles!), but the spectacular mountain scenery more than made up for that. We climbed a steep rocky path to see a most unusual phenomenon: many palm trees growing in a ravine in the side of a mountain. These are Washington Palms, the only ones native to Arizona. The name Kofa is a contraction from one of the many mines once worked in the mountains, "King of Arizona."

All of us enjoyed this particular trip *very* much.

Although this was not a spectacular year for desert blooms, some plants were in bloom everywhere. We noticed the Ocotillo plant, with long thorny stems and

with bright red blossoms at the tip of the stems. The plant puts out small leaves after a rain and loses them during a dry season. It may grow several sets of leaves a year.

The Palo Verde, Arizona's State Tree, was in full bloom in many places — a golden cloud of yellow blossoms. In Spanish the word means "green stick."

The Creosote Bush, along the roadside and in other places, has small evergreen leaves. Its common name is because it gives off an odor much like creosote.

We learned a great deal, we saw fascinating flora and beautiful scenery, we had fun, and all of us are glad we could take this trip.

Peggy Altwater

(Editor's note: If you would like an opportunity to tour with the Denver Botanic Gardens, remember our summer trip to Canada to see the International Florals is filling rapidly. For full details about the Tour call James Holme at 697-9795.)

HOW TO PICK A WILDFLOWER

There are many ways you can pick
A wildflower.

You can lie on your stomach
In a meadow
And watch it grow.

You can stare at it
Through a magnifying glass
To better discern each leaf.

You can paint it,
Sketch it,
Etch it,
In whole
Or just the bloom.

You can take its picture,
Then blow the picture up
Larger,
L a r g e r,
L A R G E R,
And hang it on your wall.

Or you can pinch the stem between
Your fingers,
Separate it from the earth
And kill it.

Carolyn Richter

Back Packer, Fall 1975

Al Moye has taken "its picture" and will show his beautiful slides on June 14 at 1:30 p.m., Classroom C. Come and bring your friends to this free show.

Thanks So Much

If our Plant Sale is like mercy which "blesseth him that gives and him that takes," the Denver Botanic Gardens recently received many blessings! The givers (our volunteers) did their usual superb job and the takers (our visitors) were amazed at the bounty that was available to them and bought, bought, bought.

Calendar of Events



June, 1980

June, 1980

- 1) 10:00-4:45 Education Building -- John C. Mitchell Hall
- 2)* 10:00 a.m. Botanic Gardens House -- Dining Room
- 3)* 1:30 p.m. Education Building -- Classroom "B"
- 3)* 7:30 p.m. Education Building -- Classroom "B"
- 4)* 10:00 a.m. Education Building -- Classroom "B"
- 4)* 1:30 p.m. Botanic Gardens House -- Dining Room
- 4)* 4:00 p.m. Botanic Gardens House -- Dining Room
- 5)* 7:45 p.m. Education Building -- John C. Mitchell Hall
- 7) All Day Education Building -- John C. Mitchell Hall
- 8) All Day Education Building -- John C. Mitchell Hall
- 9)* 9:30 a.m. Education Building -- Classroom "C"
- 9)* 7:30 p.m. Education Building -- John C. Mitchell Hall
- 10)* 9:30 a.m. Education Building -- Classroom "B"
- 10)* 12:00 noon Education Building -- Herbarium
- 10)* 4:00 p.m. Botanic Gardens House -- Dining Room
- 10)* 7:30 p.m. Education Building -- Classroom "A"
- 11)* 10:00 a.m. Education Building -- Classroom "B"
- 11)* 10:00 a.m. Education Building -- Classroom "C"
- 11)* 1:30 p.m. Botanic Gardens House -- Dining Room
- 12)* 9:00 a.m. Education Building -- Classroom "B"
- 12)* 7:30 p.m. Botanic Gardens House -- Main Room
- 13)* 7:15 p.m. Botanic Gardens House -- Main Room
- 14) 9:00-5:00 Education Building -- John C. Mitchell Hall
- 14) 1:30 p.m. Education Building -- Classroom "C"
- 15) 9:00-5:00 Education Building -- John C. Mitchell Hall
- 17)* 9:00 a.m. Education Building -- Classroom "C"
- 17)* 12:00 noon Education Building -- Classroom "C"
- 17)* 7:30 p.m. Education Building -- Classroom "A"
- 17)* 7:30 p.m. Education Building -- Classroom "B"
- 18) All Day Education Building -- John C. Mitchell Hall
- 18)* 9:00 a.m. Education Building -- Classroom "C"
- 18) 9:00 a.m. Botanic Gardens House -- Parking Lot
- 18)* 10:00 a.m. Education Building -- Classroom "B"
- 18)* 1:30 p.m. Botanic Gardens House -- Dining Room
- 19) All Day Education Building -- John C. Mitchell Hall
- 19)* 9:00 a.m. Education Building -- Classroom "C"
- 19)* 4:00 p.m. Botanic Gardens House -- Dining Room
- 19)* 7:30 p.m. Education Building -- Classroom "A"
- 20) All Day Education Building -- John C. Mitchell Hall
- 20)* 9:30 a.m. Education Building -- Classroom "B"
- 20)* 7:30 p.m. Education Building -- Herbarium
- 21) All Day Education Building -- John C. Mitchell Hall
- 21)* 9:00 a.m. Education Building -- John C. Mitchell Hall
- 21)* 11:30 a.m. Botanic Gardens House -- Main Room

American Iris Society Show & Sale

Guides Meeting

"Wildflower Families" -- Dr. Jan Wingate

Denver Bonsai Club

"Art in Nature--Sketching" -- Dr. Oksana Ross

Propagation Committee Meeting

Planning Committee Meeting

Denver Orchid Society

Colorado Cactus & Succulent Society Show

& Sale -- OPEN TO PUBLIC: 10:00 - 4:00

Colorado Cactus & Succulent Society Show

& Sale -- OPEN TO PUBLIC: 10:00 - 4:00

"Vacationing Plants" -- Mr. Andrew Pierce

Colorado Mycological Society

"Bread Baking" -- Ms. Eileen Price

Herbarium Committee Meeting

Executive Committee Meeting

Colorado Cactus & Succulent Society

"Art in Nature--Sketching" -- Dr. Oksana Ross

"Weed Control in the Home Grounds" --

Dr. James Feucht

Propagation Committee Meeting

"Advanced Bread Baking" -- Ms. Eileen Price

Denver Rose Society

Denver Dahlia Society

Denver Bonsai Club Show

Slides: "Wildflowers" -- Mr. Al Moye

Denver Bonsai Club Show

"Poison in Plants" -- Dr. Emily Tufts

Denver Parks & Recreation Dept.

Denver Audubon Society

Denver Bonsai Club

Colorado Watercolor Exhibition

Denver Parks & Recreation Dept.

Plant Life Field Trip

"Art in Nature--Sketching" -- Dr. Oksana Ross

Propagation Committee Meeting

Colorado Watercolor Exhibition

Denver Parks & Recreation Dept.

Chatfield Committee Meeting

Denver Audubon Society

Colorado Watercolor Exhibition

Potpourri Workshop

Denver Botany Club

Colorado Watercolor Exhibition

DBG New Members Workshop

Denver Men's Garden Club -- Regional

Convention

Calendar of Events for June (continued)

22)	All Day	Education Building — John C. Mitchell Hall	Colorado Watercolor Exhibition
22)*	1:30 p.m.	Education Building — John C. Mitchell Hall	Reception for Colorado Watercolor Society
23)	All Day	Education Building — John C. Mitchell Hall	Colorado Watercolor Exhibition
23)*	9:30 a.m.	Botanic Gardens House — Main Room	Ultra Violet Club
24)	All Day	Education Building — John C. Mitchell Hall	Colorado Watercolor Exhibition
24)*	12:00 noon	Education Building — Herbarium	Herbarium Committee Meeting
24)	7:30 p.m.	Education Building — Classroom "C"	Colorado Gladiolus Society
25)	All Day	Education Building — John C. Mitchell Hall	Colorado Watercolor Exhibition
25)*	1:30 p.m.	Botanic Gardens House — Dining Room	Propagation Committee Meeting
26)	All Day	Education Building — John C. Mitchell Hall	Colorado Watercolor Exhibition
26)*	7:30 p.m.	Botanic Gardens House — Main Room	Denver Men's Garden Club
27)	All Day	Education Building — John C. Mitchell Hall	Colorado Watercolor Exhibition
28)	All Day	Education Building — John C. Mitchell Hall	Colorado Watercolor Exhibition
29)	All Day	Education Building — John C. Mitchell Hall	Colorado Watercolor Exhibition
30)	All Day	Education Building — John C. Mitchell Hall	Colorado Watercolor Exhibition

JULY

1)	All Day	Education Building — John C. Mitchell Hall	Colorado Watercolor Exhibition
1)*	1:00 p.m.	Botanic Gardens House — Dining Room	Editorial Committee Meeting
1)*	7:30 p.m.	Education Building — Classroom "B"	Denver Bonsai Club
2)*	1:30 p.m.	Botanic Gardens House — Dining Room	Propagation Committee Meeting

**Members or Enrollees Only*

JUNE

1980

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

JULY

1980

S	M	T	W	T	F	S
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6	7	8	9	10	11	12
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27	28	29	30	31		

THE JOLLY GREEN GARDENER

NEWSLETTER

JUNE 1980, Vol. 10, No. 3

(For Junior Readers)



DENVER BOTANIC GARDENS

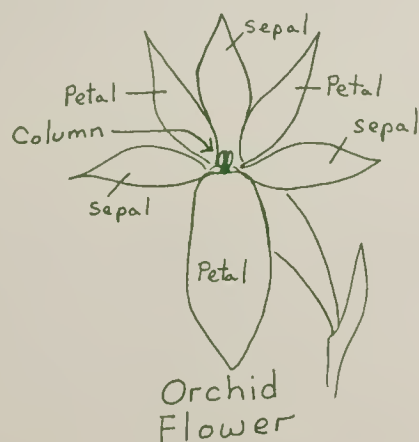
Orchids

Many people think orchids grow only in the tropics or in a greenhouse. Did you know that orchids are wildflowers in Colorado? There are about 25 different kinds of orchids found in the Rocky Mountains. Many have small flowers and are easily overlooked.



All orchids belong to the orchid family. This is one of the largest plant families. Most orchids grow in tropical or subtropical places and grow on branches and trunks of trees. The orchids that grow in the Rocky Mountains grow on the ground.

Orchids have unusual flowers. One petal is large and may be shaped like a sac. This large petal can be used as a landing stage for insects. The stamens and pistil are fused together and called a column. Some flowers resemble insects to insure pollination. The seeds of orchids are extremely small. They are difficult to germinate unless they are associated with fungi.



The coral root is a Colorado orchid that lacks green chlorophyll and therefore cannot make food like green plants. It is reddish brown and derives its food from dead material such as wood or leaves.



Another easily overlooked orchid is ladies tresses. It has small white flowers that are spirally arranged on the stem. It grows in grassy meadows.

The yellow ladyslipper is a beautiful orchid. It has large yellow flowers with an inflated petal. It is so showy that most plants have been picked and destroyed by man. It is a rare flower and must be protected and never picked.



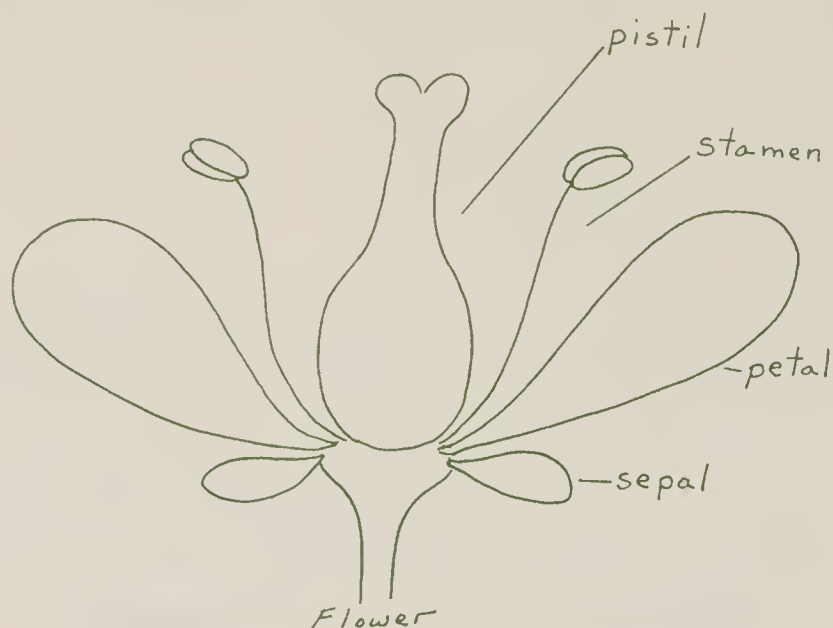
Another beautiful Colorado orchid is the fairy slipper. It is not as large as the yellow ladyslipper but is a lovely wildflower. It grows in cool, moist, forests in the mountains. Each plant has one fragrant flower.



The next time you go to the mountains, be on the "lookout" for orchids!

Flower Parts

Do you know the parts of a flower? Usually there are four parts. If possible find a flower such as a petunia and locate the parts mentioned in this article. The outer green leaf-like structures are called sepals and enclose the other flower parts in the bud stage. The often brightly colored structures are petals and are the only flower parts most people notice. The petals attract insects for pollination. Just inside the circle of petals are several small hair-like structures each with a sac containing pollen for pollination. These are the male parts of the flower and are called stamens. In the very center of the flower is the female part called the pistil. It will develop into the fruit and contain seeds.

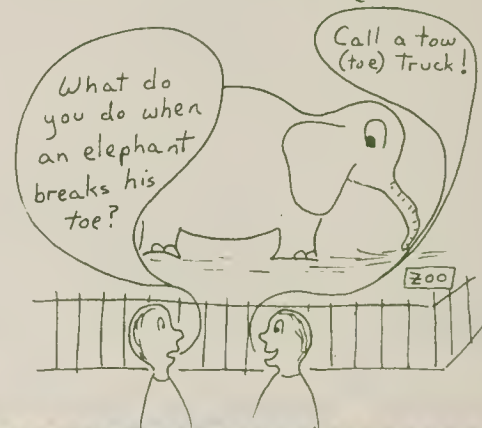


Craft Corner

Select some plant leaves and flowers, such as from the dandelion. Place the leaves and flowers between layers of tissue paper or newspaper, and then press between the pages of a thick book. When the plant parts have dried, glue them to a piece of paper to form an interesting picture.



Jolly Jokes



Puzzles



Hidden Objects

In this picture, find the following items:

apple, snail, grapes, snake, peanut, hat, 5 dragon flies, cup, bird, spoon, airplane, eyeglasses, feather, acorn, pear, cat, fish, elephant, book, mushroom, car.

Gardening Tips for June

After a belated spring, we should now be able to safely say the growing season is underway. Because of the wet season it was difficult for all area gardeners to get things planted out and most of it had to be done all at once. Now that the planting chores are hopefully over, it's time to take a look at the insect problems that we might encounter in the garden.

The March and May issues touched briefly on the concept of Integrated Pest Management (IPM) with a promise that more would follow. Insect activity should be increasing now but I hope you will strive to follow a pest management program using the steps that we discussed in May, namely, that it is important first to identify whether an insect is really a pest at all, then decide whether the insect is a real problem and is causing enough damage to warrant control, then follow with appropriate control if it's the proper time for that control.

Aphids on your roses may cause considerable concern and may be one pest that you would consider warranted control now. On the other hand, if there are only a few aphids on your trees and shrubs, you might find that spraying the entire yard is not necessary and that they can be tolerated. Unless they build up in large populations they really don't do that much damage. The release of lady bugs, a practice that has become popular in the last few years, has still proven to be a very effective method on a backyard basis, but you might want to try a new way which has been found and who knows, it may help to keep the pest populations down to tolerable levels. Don't expect wonders from lady bugs, however, they don't eat all kinds of insects. In fact, they don't feed on all kinds of aphids. You might find them feeding on your roses but not on your viburnum. At least, this has been my experience. I have found, however, that distortion caused by aphids on the snowball bush, while kind of unsightly for a while, tends to clear up by mid-summer. So if you can tolerate that, you can probably avoid using a pesticide.

One non-pesticidal control that has proven itself and has received some recent publicity is the control of whitefly, now becoming a problem in tomatoes and some other garden annuals. Here's a method you might wish to try. Take a piece of plywood about twelve inches square and paint it with bright yellow paint. A chrome yellow is best. After the paint has dried, coat the painted surface with mineral oil. Place this yellow board near your tomato plants and any others that have been affected by whitefly. Occasionally, just when you think of it, shake the plants gently to stir up any whiteflies that are on them. They will tend to migrate to the yellow board, or boards if you need several, and stick there. This method has been found sufficiently effective on a small-area basis to keep whitefly populations below damaging levels.

Watch for Tussock Moth

Unfortunately, not all insects in our garden can be as easy to control as whitefly. Oystershell scale and tussock moth are two that multiply so fast that any natural controls haven't seemed to work.

Of immediate concern, particularly for those who own large spruce, concolor fir and Douglas-fir, is the tussock

moth. This insect normally hatches from eggs the latter part of May or the first week or so in June. The tiny, fuzzy caterpillars begin feeding at the tops of the evergreens, choosing the first succulent, new growth, then later feeding even on the older needles. Because they are so small and are usually located at the tops of tall trees, they often go unnoticed until it is too late. Begin to look now for signs of feeding of this insect. Trees that are heavily infested will have quantities of droppings at the base along with bits of fresh, green needles. To see them more easily, place a piece of white paper, weighted down with a stone, beneath the tree for a day or two and observe the amount of droppings or other debris.

If you should have a tussock moth infestation, control should be applied promptly. It is important to have the proper spray equipment because it must be capable of reaching the very top. Small trees can be protected with the common, home variety of spray gear, but larger trees are best sprayed with commercial arborist's equipment. The chemical to use will vary to some extent with the size of the caterpillars at the time spray is applied. If the caterpillars are caught early enough, $\frac{1}{2}$ " or less in size, Malathion, Sevin or Diazinon will do the job. Since Malathion has only a 24-hour residual effect, the trees will need to be re-sprayed two or three times at seven- to ten-day intervals to catch any overlap. Advance stages of infestation, where the caterpillars are much larger in size, require stronger chemicals and should be treated by a professional sprayman. Trees that have been caught in time will usually replace the growth that was lost. Heavy infestations occurring two years in a row usually result in the loss of the top of the tree.

Oystershell Scale

About fifty different types of trees and shrubs are attacked by oystershell scale. Actually, there are two types of scale — gray and brown. The gray species has only one generation a year and the eggs should be hatching about this time. Control can be obtained with weekly applications of most any garden insecticide but the best would be Malathion or Diazinon. The brown species also should be hatching now but will have a second generation in mid- to late-July. Mark your calendar to watch for the crawler stages of the brown type, particularly if you have lilacs, ash, shrub dogwood or euonymus as these are the most frequently attacked.

Unfortunately, there are no satisfactory biological controls for this insect. Allowing populations to build up in hopes that a biological or natural control will keep them down usually results in severe injury or even loss of the plants.

Dr. J. R. Feucht

Denver Botanic Gardens Exhibit

The Colorado Watercolor Society will be presenting its ninth all water - media exhibit at the Botanic Gardens — June 18 through July 3. A public reception will be held June 22 from 1:30 to 4:30.

The exhibit is comprised of new work by the members, selected by Walt and Olive Green for their quality, workmanship and originality. The Greens were sponsors of the Society in 1954.

Membership in the Watercolor Society is based on achievement in use of watercolor, although many members are skilled in other media.



Denver Botanic Gardens, Inc.
909 York Street
Denver, Colorado 80206
303-575-2547

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Classes

The *Wildflower Families* class is full. If you have signed up, meet on June 3 in Classroom B at 1 p.m. and learn basic information about family identification. Then meet on June 5 at the north parking lot at Red Rocks Park at 1 p.m. to practice what you have learned.

The *Tree Walk in Boulder* is also full. Meet at the parking lot at 909 York at 8 a.m. on June 4 or at Regent Hall on C.U. Campus at 9 a.m. Take the turnpike at Boulder, turn west on Baseline then north on Broadway. At the first traffic light (20th Street) turn right. Regent Hall is the building with the semi-circular drive and visitor's parking is just beyond the Hall.

Next, our Conservatory Superintendent will impart timely tips for the care of your *House Plants* while you are away on vacation. This is scheduled for June 9 at 9:30 a.m., Classroom C, free.

Eileen Price will offer two *Bread* classes, one for beginners on June 10 from 9 to 12 noon, Classroom B, and one for more advanced students on June 12, same time, same room. The cost per class is \$4.50 for members, \$7.00 for non-members. Please bring the necessary materials as listed in the Spring List of Classes.

The *Gardeners Chronicle Gardening Illustrated* described a plant (*Polygonum baldschuanicum*) that "spread itself over the garage, swept along the garden hedge, swallowed up the tool shed and summer house, brought down the garden wall, got out into the road, and followed the man to work." If you have anything like that, you need help! Sign up for *Weed Control in the Home Grounds* on June 11 at 10 a.m. in Classroom C. Free, but please call and sign up before June 4th.

Field trips will fill the next week. Are you interested in edible plants? Buy *Edible and Useful Wildplants of the Urban West* (\$8.47 at the gift shop) and join Sue

McPherson on June 16th. Meet the group at 8:30 a.m. where the High Line Canal crosses Bellevue at Birch Street. Free, but bring book.

Continue your study concerning the properties of plants and sign up for *Poison in Plants*. Dr. Emily Tufts, who has taken a sabbatical from Oregon to work at the Poison Control Center, will meet her students in Classroom C on June 17 at 9 a.m. After a discussion, everyone will walk around the Gardens. The cost is \$2.00 for members and \$3.50 for non-members.

Finally, Mary Edwards will meet those interested in wildflowers at 909 York on June 18 at 9 a.m. for her regular monthly field trip. Free.

Colorado Cactus and Succulent Society

Succulent plants from every continent will be featured at the annual cactus and succulent show and sale scheduled for Friday and Saturday, June 7 and 8, at the Denver Botanic Gardens.

This event is sponsored annually by the Colorado Cactus & Succulent Society. Visitors this year will be treated to a broad selection of rare and exotic species of cacti from North & South America, Euphorbias from East & South Africa, Crassulas from Africa & Eurasia, Echeverias from Mexico and hundreds of specimen plants, many in bloom which are not usually seen outside of private collections.

Sale plants will be offered at reasonable prices. Many plants are contributed to the sale by members and have been propagated from choice specimen plants.

The show and sale will be open to the public from 10 a.m. to 4 p.m. each day. Admission is free.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$15.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 575-2547.



Green Thumb Newsletter



Number 80-7

July, 1980



Summer Serendipity with Members of the University of Denver Jazz Band on July 15

Members of the Gardens are invited to a picnic on the grass in the amphitheatre. This is a bring-your-own supper party. Bring your picnic and your blanket.

Gates open at 6 p.m. and at 6:30 p.m. The Jazz Band will entertain in the outdoor amphitheatre (John C. Mitchell Hall if inclement weather).

Admittance will be by membership card or this newsletter.

Gardening Tips for July

INTEGRATED PEST MANAGEMENT IN THE HOME GARDEN

Integrated Pest Management (IPM) is a relatively new name to an old concept. The concept is one of using cultural, biological and chemical means to manage pests with the ultimate goal of reducing pesticide use to the minimum. Contrary to the belief of some, IPM does not mean that pesticides are eliminated altogether. The IPM concept does, however, encourage a close look at whatever other alternatives there might be to reduce a pest problem to acceptable levels. Acceptable levels is a key point in IPM. If a bug-free yard and garden is the only acceptable level for you, then IPM practices will probably not work. If a few aphids on your roses and some chewed leaves of your vegetables is tolerable, an IPM program in your garden can be implemented. In other words, the effectiveness of an IPM program depends much on the attitude of the individual and what thresholds of damage will be allowed before drastic measures are considered. It has often been experienced that if one ignores a few aphids or some other type of pest, even just for a little while, instead of rushing out immediately with a spray, that the pest, while still present will remain at a tolerable level. Frequently, a natural control such as ladybird beetles or perhaps a change in the weather, will keep the pest in check.

Degree of Damage

The thresholds of acceptable pest population and the damage they may cause can be either economic or aesthetic. Economic thresholds may occur if a heavy infestation of a pest is ruining your vegetables intended for the family table or a defoliating insect like the tussock moth builds up enough to destroy the top of your spruce. The damaged top of a spruce could economically affect your property value but it would also be an aesthetic damage because it would not be nice to look at.

The degree of damage that one might allow depends upon the plant too. A few leafrollers in a large apple tree would not be of any consequence but in a newly planted sapling, they would be of more concern. Leafminers in spinach and chard would be of more concern than leaf miner in an elm tree. Caterpillars chewing your cabbage would be of more concern than ones chewing on a large cottonwood, etc. The relative magnitude of the problem and whether or not the plant is being grown for food or not should be considered. Control priority, then, can be decided upon.

Alternatives to Pesticides

Alternatives to the use of pesticides include: do nothing, mechanical removal of pests (hand-picking of tomato worms for example), washing pests off with a strong stream of water, try biological controls where appropriate, good sanitation (debris removal that might harbor pests), sound pruning practices to discourage diseases, careful watering to avoid "microclimates" that would encourage diseases and using resistant plants.

Diseases are among the easiest to prevent in a garden simply by avoiding frequent light watering and where possible, avoid over-head watering. Keeping plants from

becoming crowded also helps to reduce some diseases. Diseases such as mildew and blackspot in roses, for instance, are more common in gardens that have been over-planted and receive frequent wetting by sprinklers in an adjacent lawn area. Avoiding frequent wetting of the soil helps to discourage the buildup of slugs too.

The controversy over releasing beneficial insects such as lady bird beetles continues. There is no doubt about the ability of lady bird beetles to help control populations of some aphids and mites. The question is that when a mass of them are suddenly released in a backyard, will there be enough population of the right kind of pest to sustain them? Often the beneficial insect fails to find enough food and either dies off or moves to a better food supply — perhaps your neighbor's yard. In other words "the grass may look greener to the insect on the other side of the fence". The best approach, which fits well in an IPM program, is to allow natural populations of a predatory insect or of a beneficial parasite to build up by using all possible restraint with non-selective pesticides that may discourage the buildup of the wanted natural control. This may mean, and usually does, that you will have to tolerate some temporary damage to your plants.

Practicing IPM in the home garden means that you have to become a better and more frequent observer of what is taking place. You also need to become a better diagnostician, becoming aware of what is and what is not a serious problem. In other words, know the "good guys from the bad". The grey and orange worm-like larvae of lady bird beetles is often killed due to ignorance. They do look threatening but are quite harmless and beneficial.

Following are some simple steps to take when faced with a potential pest problem: (1) Be certain you have identified the pest correctly. Enlist the aid of your CSU County Extension Service if you are not sure. (2) Assess severity of damage done making sure that the damage is actually caused by the alleged pest. Often, what may appear to be damage done by an insect that may be present is from another cause or, the pest that did the damage has already "left the scene of the crime". (3) If a pest problem is identified, depending upon severity, you can choose from several causes of action — do nothing, letting nature take its course; wait a while and observe whether the problem is increasing or decreasing; try mechanical or biological methods if appropriate or select an appropriate pesticide. Seek professional advice to help you with these choices.

Dr. J. R. Feucht

A Great Group!

Our guides have donated hours of their time this year. Julie Held had the extremely sensitive job of matching requests for tours to available volunteers and both were well satisfied. The Guides Committee has announced that at 10 a.m. on the Tuesdays, Wednesdays and Thursdays in July and August scheduled tours will be handled.

Help Please!

We need a volunteer who is interested in tropical plants — their names both scientific and common, and historical and botanical facts on those plants. This person should be able to donate one or more days a week.

If interested please call 575-2547 and ask for Larry Latta.

Dr. Gambill to Retire



27 May 1980

To Richard A. Kirk, President
and Members of the Board of Trustees of Denver Botanic Gardens

Since 1 July 1970 it has been my privilege and pleasure to serve in the capacity of Director of the Denver Botanic Gardens. With the valued cooperation of members of the Board of Trustees, the Staff, the Volunteers and other friends of the Gardens we have been able to fill these years with multitudinous activities which have resulted in growth and development unprecedented in the history of the Botanic Gardens.

Next month (June) I shall reach my sixty-fifth birthday. After ten years as Director I feel it is time for me to step down, and turn the administrative duties over to a younger person who can bring fresh new ideas, imagination and vitality to a job which is admittedly very complex and demanding.

I am, by this letter, giving notification of my intention to retire as Director of the Denver Botanic Gardens as of 1 August 1980. It is my sincere desire to serve the Gardens, after my retirement, in a professional capacity as a botanist. With the approval of the Board of Trustees, and after a suitable interval, I should like to have an opportunity to do work in the Kathryn Kalmbach Herbarium, to teach classes, to lead field trips and become immersed in the taxonomy of the native and cultivated flowering plants of the plains and front range areas of Colorado. If time and energy permit it is my intention, also, to be helpful in furthering the development of certain of the unfinished gardens at the York Street location, particularly the Japanese and Plains Gardens, and also the Chatfield Arboretum. If in any of these capacities the Board of Trustees believes I may be useful, I humbly offer my services.

At another time I should like to share with the Board of Trustees more adequately some of the thoughts and feelings which come into my mind after these years of fruitful cooperation with you. Let me express my deep thanks to each of you individually for the privilege of working and sharing with you our efforts devoted to the development of a truly outstanding Botanic Gardens in Denver.

The experiences have been rich and rewarding, and I have valued more than I can express my association with the Botanic Gardens in so many ways.

Sincerely,

William G. Gambill, Jr.
Director

Dr. Shubert, the secretary of the Board, made the following motion which was seconded by Mr. Mitchell.

The Board of Trustees approves Dr. Gambill's request for retirement with our statement of approval for his past ten years of faithful service, and furthermore, I include in the motion our approval of his promotion to the rank of Director Emeritus and that he be awarded certain amenities to be determined by the Executive Committee.

Unanimously accepted.

19TH ANNUAL TERRACE AND GARDEN TOUR

Thursday, July 24 9:30—5:30

Seven very special gardens have been chosen for this year's tour. Located in the Bow Mar and Thraemoor areas of southwest Denver, four gardens have frontage on the water and two of the gardens look out onto the Pinehurst golf course. Terracing is also a unique feature of most of the gardens. Free refreshments will be served in two of these lovely settings.

Tickets may be purchased from the Botanic Gardens Gift Shop, from Guild members, or at any of the gardens on the tour. Cost \$5.00.

Classes

This month the mountains are "apparelled with plants as with a robe of imbroidered works, set with Orient pearls and garnished with great diversity of rare and costly jewels." John Gerard. Come on our field trips and enjoy the beauty.

Both scheduled trips to *Mt. Goliath* are full. But Mrs. Shepherd, the president of the Botany Club, has invited members to join her at her cabin to see the *Columbines*. This is scheduled for July 12, no charge. Meet at parking lot at 909 York at 8 a.m., bring lunch and share gasoline expenses. (The directions are as follows: take 285 to Bailey, turn left at the bottom of the hill in Bailey, go 7 miles, do not take any left-hand turns, "Shepherd" is posted on tree on right-hand side.)

The same area will be visited on July 16th when Mrs. Edwards leads the *monthly field trip*. Meet at 909 York at 9 a.m. Free and all welcome but bring lunch and share gasoline expenses.

N.B. The August field trip will be on August 13th not the 20th as listed in the Summer Schedule.

The *Tour of the Outside Gardens* is full. Meet Mr. Moore at 8:30 a.m. at the parking lot at 909 York (but please park across the street).

Arranging Lessons Using Fresh Flowers will start on July 28th at 9:30 a.m., Classroom B, and will continue for the next two Monday mornings. Please bring materials as listed in the *Summer Schedule*; the flowers will be picked at the Gardens. The fee is \$10.00 for members, \$15.00 for non-members.

Finally, a trip to *Loveland Pass* on July 30th will finish the month on a high note. Meet at 7 a.m. at 909 York or on top on the Pass at 9 a.m. (Take I-70 west and follow the signs after Georgetown.) No charge and no limit but please sign up by July 22nd.

If you can't join us on any of these excursions, visit the Herbarium. Last year one Tuesday in July we displayed 106 species (and we could have shown more but space was the limiting factor!). Or join the Andersons when they show slides entitled "*5000 Miles of Rocky Mountain National Park*." This is scheduled on July 12 at 1:30 p.m., Classroom C. Bring your summer visitors to this free show.

New Organization

Interested in forming a Carniverous Plant Society in Denver? Call Paul Heiple at 238-4808.



Joan Franson (right), National Chairman of the American Rose Society, Miniature Rose Test Program and Linda Brown (left), Test Garden Supervisor for the Denver Botanic Gardens photographed in the Miniature Rose Test Garden.

Plan to visit this area (east of the Japanese Garden) when you come to the All Miniature Rose Show, July 13, 12 noon to 4:30 p.m. at the House, 909 York.

New Book by Kelly

George Kelly has just announced the completion of a new book. *Ground Covers for the Rocky Mountains* describes the characteristics of 240 different plants so that anyone will be able to select just the right plant for his area. The 60 page book is profusely illustrated and is available in the Gift Shop.

Tea House Open

On May 22nd the members of the Around the Season Club and the two summer interns were treated to a delightful explanation of the Botanic Gardens' Japanese Tea House and a demonstration of the tea ceremony. Mr. Kim Thrasher, Urasenke-trained teacher of Chado (tea ceremony) who was host for the gathering, vividly and concisely related the history of tea as it pertains to the Japanese culture. As he also explained, the tea house itself is constructed according to the dictates of tradition: from the serene pathway and fountain, to the three-foot high entryway, to the rough-hewn supporting beams — all elements announce the interdependence of man and nature and bid one to put aside the worldly.

As to the finale to this gathering, Mr. Thrasher served tea to one of the members of the audience. Tea was demonstrated to be precise yet flexible method of honoring one's guests while laying aside differences in position as well as a day's cares.

Although the tea house is regularly open to the public the first Saturday of each month from 10 a.m. to 12 noon, many members have not yet taken advantage of the opportunity to see the interior of the structure and to hear Kim's enlightening presentation. I strongly urge each of you to enjoy it at your earliest opportunity.

Karin Despain

(Editor's Note: The tea house will be open on July 5th.)

July, 1980



Denver Botanic Gardens, Inc.
909 York Street
Denver, Colorado 80206
303-575-2547

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Help please

Are any members looking for projects for themselves or for a group they sponsor? The Forest Service needs help in rebuilding the trails on Mt. Goliath. If you can volunteer a day, plan to meet at the lower parking lot on Mt. Goliath on July 26th at 9 a.m. Hard hats and tools will be provided but please wear long pants, hard toe shoes, gloves and take water and your lunch. Please call 575-2547 before July 18th so we may notify the Forest Service how many to expect. Your efforts will be much appreciated.

Our members may be interested in the wording of the original *Memorandum of Understanding* between the U.S. Forest Service and the Denver Botanic Gardens pertaining to Mt. Goliath:

WHEREAS: the Botanical Gardens Foundation of Denver desires to cooperate with the United States Department of Agriculture, Forest Service, in the development of a nature trail in the Alpine Zone of the Arapahoe National Forest located in Sections 6 and 7 Township 5 South, Range 73 West 64th Principal Meridian, as more particularly shown on a map dated December 11, 1957 by John A. Rundgren, attached to and hereby made part of this agreement.

The Forest Service thru the Supervisor, Arapaho National Forest agrees:

1. To construct and maintain a foot trail through the area.
2. To provide public parking areas at the beginning and end of the trail.
3. To provide adequate directional and informational signs, and other facilities as it deems necessary for public safety, use, and enjoyment of the area.

The Botanical Gardens Foundation of Denver, Inc. agrees:

1. To select a series of stations along the trail at which points markers will be set to help identify plants; and to prepare descriptive literature of adjacent botanical, ecological, geological or zoological features as it deems necessary to public understanding and enjoyment of the area.

It is mutually agreed:

1. That this agreement shall terminate on 30 days notice from either party.
2. No member of or Delegate to Congress, or Resident Commissioner shall be admitted to any share or part of this agreement or to any benefit that may arise therefrom unless it be made with a corporation for its general benefit.

Approved under above conditions at

Golden, Colorado this 12 day of December, 1957

Tributes

In memory of Mrs. James Allen

Mr. and Mrs. Richard A. Kirk

In memory of Anna Beebe Keller

Mrs. Frances K. Manz

Donations have been received from the following friends:

John Clark Coe, rose cones for the Rose Garden
Colorado Chapter of the D.A.R., an American flag
Denver Dahlia Society
Gloxinia Gesneriad Growers
Mrs. O. J. Laurente for the Library
Dr. Currier McEwen for Iris Garden
Charles Mosser, a checkwriter machine for the
Accounting Office
Perennial Garden Club
Marty Stouffer Productions, Ltd., a film for education
program



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$15.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 575-2547.



Green Thumb Newsletter



Number 80-8

August 1980



A six month internship sponsored by The Denver Foundation has enabled Mary Tellers, a horticultural therapy student from Kansas State University, to work with community gardeners. She (right) is pictured with Celia Goldman (left) at the DBG Community Gardens.

Classes

The field trip to *Michigan Creek* is full. If you are one of the lucky ones on the list, meet on August 5 at 7 a.m. at 909 York or at Jefferson, Colorado at 9 a.m. (Take 285 west to South Park and Jefferson. The group will meet at the intersection of the road turning off to the north in Jefferson itself.) Bring lunch, share gasoline and expenses.

The Walk in *University Park* on August 7 is also full. We will start at the corner of E. Warren Avenue and S. Milwaukee at 8 a.m. Wear comfortable shoes and you may wish to bring a liquid or a quick energy snack if it is a hot morning.

The *Mexican Cooking* class on August 12 will be taught in the preparation room of the Hall starting at 9 a.m. sharp. Please bring one tortilla; everything else will be provided for the cost of \$6.00 for members and \$8.00 for non-members.

Reminder. Mary Edward's field trip will be August 13. Meet at 909 York at 9 a.m., bring lunch and share gasoline expenses with the driver.

As of this writing, 5 spaces remain for *Fresh Herbs in Cooking*. Don't delay in signing up for this class to be held August 22nd. Meet at 9 a.m. in Classroom B. The cost is \$4.00 for members and \$6.00 for non-members.

Mass Plantings of Wildflowers

Trials of new bulk wildflower seed mixes are being run along Josephine Street on the eastern and southern edge of the community gardens. The mixes have been formulated by Applewood Seed Company to make it economical for the homeowner to seed large areas (250 - 5000 square feet). The primary objective is to provide a colorful, long-term lawn substitute in urban areas that does not require regular watering and maintenance. In the mountains and rural areas, the intention is to restore native flowers to disturbed land around building sites and road cuts. There are two mixes, one for dry, sunny areas and the other for moist areas in sun or partial sun. The mixes may be planted alone or with native grasses. Both mixes include annuals, biennials and perennials that will germinate and grow rapidly and be competitive with native grasses, weeds, and ground covers. Two ounces of seed will cover 250 - 500 square feet. Keeping the seed consistently moist for 3 to 4 weeks is critical for the success of these flowers. Therefore, several trials are being conducted with different mulches and top coverings to determine the best mediums for this purpose in difficult situations. Some materials being used are peat moss, 1" gravel, bark and wood chips. A further report will be made toward the end of the summer on these trials and their outcome. Right now we suggest you come and take a look and judge for yourself, comments welcome. Items included in the mixes are as follows:

Wildflowers for Moist Areas

<i>Aquilegia caerulea</i> —	<i>Chrysanthemum leucanthemum</i> — Ox-Eye Daisy
Columbine	
<i>Delphinium ajacis</i> —	<i>Coreopsis lanceolata</i> —
Rocket Larkspur	Lance-leaved Coreopsis
<i>Hesperis matronalis</i> —	<i>Ipomopsis rubra</i> — Standing Cypress
Dames Rocket	
<i>Liatris spicata</i> —	<i>Linum grandiflorum</i> —
Gayfeather	Scarlet Flax
	<i>Nemophila menzeizii</i> — Baby Blue Eyes

Wildflowers for Dry or Sandy Areas

<i>Achillea millefolium</i> —	<i>Aster tanacetifolius</i> —
Yarrow	Prairie Aster
<i>Centaurea cyanus</i> —	<i>Coreopsis tinctora</i> —
Cornflower	Plains Coreopsis
<i>Cichorium intybus</i> — Chicory	<i>Escholtzia californica</i> —
<i>Linum kewisii</i> — Blue Flax	California Poppy
<i>Helianthus annuus</i> —	<i>Gaillardia aristata</i> —
Sunflower	Indian Blanket
<i>Penstemon strictus</i> —	<i>Gaillardia pulchella</i> —
Beardtongue	Firewheels
<i>Ratibida columnaris</i> —	<i>Gypsophila elegans</i> —
Coneflower	Baby's Breath
<i>Silene armeria</i> —	<i>Anagallis arvensis</i> — Poor Man's Weatherglass
Campion	—Gene Milstein

The National Herb Garden

NEW GARDEN OPENS — The National Herb Garden is a major attraction for visitors to the U.S. National Arboretum in the Nation's Capital this summer for some 7,000 carefully selected herbal plants are on display there.

The National Herb Garden is really three gardens in one. In herbalist parlance, there are three "rooms," each containing a major garden. Plant material masses, changes in elevation, and treillage (lattice-work) are used to separate, yet integrate, the three rooms: A *Knot garden*, a *historic rose garden*, and *specialty gardens*.

In the **Knot Garden**, plants are arranged to look like interwoven chains. Although the design is intricate and formal, it is truly simple compared with the original knot gardens of the Renaissance in France and Italy.

Roses are prominently mentioned in every phase of the long history of the culture and use of herbs. Literature of the Roman Empire contains many references to roses and cultivation of rose gardens and Greek and Roman writers described the therapeutic value of rose leaves and petals. About half of the current rose collection for The National Herb Garden was obtained in Europe.

The *Specialty Garden* area featured 10 gardens arranged in an oval. The gardens vary somewhat in size, but most are about 40 feet long and 25 feet wide. Each garden reflects a theme with each showing the historic importance of the plants it contains and their relationship to cultural, pharmaceutical, commercial, and culinary uses. The ten themes are:

Dioscorides — This garden includes some of the plants used and described by Dioscorides, a Greek who was the outstanding physician and author on botany of his time (first century A.D.).

Early American — Plants used by this country's settlers are included.

Dye — Even today, when a wide choice of synthetic dyes are available, many fabric workers prefer to use dyes derived from plants.

American Indian — American Indians used herbs as a source of medicines, dyes, poisons, foods, and materials to use in their many crafts.

Modern Botanicals — This garden portrays present medicinal use of herbs. Included, for example, is *Digitalis purpurea*, the foxglove plant that furnishes the digitalis used in some heart ailments.

Culinary — Here, visitors probably will find more plants with which they are familiar than in any other specialty garden. Included are garlic, thyme, dill, savory, parsley, and rosemary.

Industry — This garden displays economically important crops such as cotton, rice, jute, flax, rape, and hemp.

Fragrance — Many home gardens or window boxes include some of these plants — lavender, mint, rosemary, and scented geranium.

Oriental — Most of the plants in this garden come from China, Japan, and Korea.

Beverage — Visitors may be surprised at the wide range of plants and plant parts that are brewed for drinking.

HOW IT CAME TO BE — The National Herb Garden is proof that persistence pays. In 1965 some of the members of *The Herb Society of America* conceived the idea of a National Herb Garden at the U.S. National Arboretum, in the Nation's Capital. Over the next 15 years Herb Society officers worked out the problems — they raised funds, overcame legal obstacles, employed an architect, and found support in the Congress.

The landscaping-architectural design for the National Herb Garden was rendered by Sasaki Associates, Watertown, Mass. This is the firm that also designed the Arboretum's Japanese Bonsai Collection, which won worldwide acclaim since its dedication in 1976. The Herb Garden and Bonsai Collection are twin attractions, in neighboring locations at the Arboretum.

Turf and Groundcover Demonstration Area

The recent expansion of the turf and groundcover demonstration area provides an excellent example of plant materials suitable for local environmental conditions. It is an especially useful display for the landscaper concerned with aesthetics as well as water conservation. The designer of the area, Gayle Weinstein, has emphasized the use of native grasses and groundcovers as a way to maximize water usage and minimize maintenance.

Twenty-seven turf plots are arranged for easy comparison of soil, water, and maintenance requirements. Among the examples of grasses requiring minimal water are Blue Grama, Fairway Crested Wheat, Meyer Z-52 Zoysia, and Sharp's Improved Buffalo Grass. Included in the display of grasses requiring high water are Biljart Hard Fescue, Rugby Kentucky Blue, Pennfine Perennial Rye, and Manhattan Perennial Rye. As an alternative to turf, twenty-five varieties of groundcovers are displayed both in sunny and shady exposures. Also, the use of non-plant material groundcovers is demonstrated along with a display of the most common weeds in turf and cultivated areas.

For interested visitors a free pamphlet is available describing the growth habits and cultural requirements of the plant material on display. A free class on turf and groundcovers will be presented by Gayle Weinstein on September 8th from 9 am to 11 am. Slides will be shown in Classroom C and a tour of the demonstration plots will be given.

—Evelyn Smith

(Editor's Note: Evelyn is a summer intern at the Denver Botanic Gardens.)

Travel to South America

Members will have received their announcements now concerning the proposed tour to South America. This exciting travel opportunity will feature many of the beautiful gardens in Peru, Argentina and Brazil with their unusual tropical flora. The 23-day tour departs on November 1 and reservations will be accepted until September 22. Don't miss out. Write: Write Way Tours International, c/o George Lambruschini, 617 So. Olive St., Los Angeles, CA 90014 or call 1-800-421-9100 for further information.

Gardening Tips for August

The long, hot, dry siege that we have experienced since May serves to point out once again that we do indeed live in a great American desert. While there is nothing unusual about Colorado's climate, perhaps we might describe this year, so far, as being more unusual than usual. The weather events have had a considerable influence on gardening activity.

This was a record year for prolonged snow cover and everyone was breathing a sigh of relief, thinking that the drought years had ended, not realizing that a real drought occurred during the winter months. Some of this is just now showing up in some of the larger trees. Honeylocusts in particular seem to be in serious trouble. This office has had many inquiries and many trees have been observed to determine why dieback has occurred and why trees suddenly wilt. The explanation lies in looking back into the weather history, particularly starting with the severe storm just prior to Thanksgiving Day. This storm carried with it, a lot of moisture which promptly froze in a slush, causing difficulties even with driving, as a result of ice pockets in the roads. This same ice tended to seal off the soil surface from further water penetration, followed by many more snowstorms that further insulated the ground, preventing a thaw and moisture penetration. The dieback occurring to trees now is the result of root desiccation that occurred during the ensuing November - February period when some roots ran out of needed moisture that could not be replaced until thawing in spring.

The heavy moisture in May, setting records in many areas, seemed welcome. In truth, it actually was a detriment to trees that were already suffering from winter injury because the constantly saturated soils reduced the oxygen level, discouraging regeneration of new roots. Such trees came out of dormancy in spring appearing normal, only to fold when the hot weather hit starting about Memorial Day. There was more top to the plant than the root system could take care of. As a natural protection plants lost their leaves or diedback to compensate.

Unfortunately, the natural tendency when trees begin to fold, is to apply liberal amounts of water. In heavy clay soils particularly, this creates a bigger problem by driving out additional oxygen and further reduces chances for root regeneration. This is why so many lawns that were green in May, browned suddenly in June when it got hot. They had no root systems to take up the water to begin with. The solution is in providing proper aeration rather than quantities of water.

Bug Explosion!

The cool, wet-to-hot, dry conditions also caused an explosion in insect populations. Tussock moth has been one of our biggest problems. Unfortunately, it is a little late to do much because this insect is now in the process of pupating and during this month, will emerge as an adult, laying egg masses for next year. If you have spruce, fir or Douglas-fir, be on the lookout for grayish cocoons on the lower sides of the branches and bark, crevices, under the eaves of the house and under fence rails. You will find that some of the cocoons will have a frothy mass on top of them and the remains of a single moth. This is the wingless female that crawls on top of her own cocoon, lays her eggs and dies. (What a life!) You could help

reduce next year's populations by destroying these egg masses now.

The elm leaf beetle is also another insect that has scouraged trees this year, particularly Siberian elms. It may also be too late to do much now, particularly if your tree is completely skeletonized and turning brown. Another generation, however, can still occur. Watch for the olive-striped beetles crawling along on the leaves of the trees. They will be laying eggs for another cycle. This is the time to apply the appropriate pesticide such as Orthene or Sevin.

If you live in outlying areas, there is no need to remind you that grasshoppers have been a severe problem. In some areas, grasshoppers have literally covered the ground and have stripped fields of anything green, then moved into yards, damaging the grass, trees, shrubs, and even the thin bark of young trees. Because they are migratory insects, they are difficult to control. Contact materials such as Malathion, Diazinon and Orthene will help. If you are spraying vegetables, do not use Orthene or any similar systemic. Always read the label before using the product.

Getting a vegetable garden growing this year was a difficult task. Many gardens were considerably later than usual and while the hot weather has been good for cucumbers and melons, it has made it difficult to get a good yield from lettuce and the other cooler season vegetables.

Insects have been a big problem with vegetables. The Mexican bean beetle, mites and aphids have taken their toll in many gardens. A cursory look at the tomato crop seems to indicate that it is going to be hard to get high yields this year. They got off to a slow start, then had to adjust to extreme hot weather at the time when fruit set was supposed to occur. While tomatoes like it warm, they don't seem to like it this hot.

Be sure to look at your tomatoes closely for the ever-present tomato hornworms. The worm is often hard to see because it is so well camouflaged, but if you see leaves disappearing and greenish-black droppings, you can be sure the worm is there also. Pick them off by hand. This is the best solution. However, if you find this distasteful, a spray of Sevin applied during a cool part of the day will help to reduce this pest in numbers.

Even though cool, moist weather is not conducive to good fall color, let's hope for it soon anyway.

—Dr. J. R. Feucht

Tea House Open

The Japanese have made the tea ceremony an austere ritual which strives for virtue in simplicity. Join Kim Thrasher from 10 to noon on August 2 (ceremony at 11) and enjoy the beautiful among the mundane items of everyday life. All welcome.

Information at Your Fingertips

Would you like information about houseplants, vegetables, lawn care or watering? What about food preparation, clothing, energy or pet care? These and many more items are covered in C.S.U. Extension Teletips, a state-wide, toll-free telephone information service. Brochures listing all topics are available at all County Extension Offices.

August 1980



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909 York Street
Denver, Colorado 80206
303-575-2547

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Gladiolus Show

The Colorado Gladiolus Society will host their annual Gladiolus Show at the Denver Botanic Gardens on August 9th and 10th. Time for public viewing of the exhibition will be from 1 p.m. on Saturday; and from 10 a.m. to 4 p.m. on Sunday.

The theme of this year's show is "Under the Big Top" with a Circus/Carnival motif. Our exhibition is open to anyone who cares to enter. We are especially encouraging the first-time exhibitor who has a top-notch gladiolus growing in their garden. It doesn't even need to be classified . . . for we call this our *No Name Variety Division*. For old timers and novice alike, feel free to bring your gladiolus spikes to the rear entrance of the Botanic Gardens on Saturday morning, August 9th before 10 a.m. for placement in the show. Or, if you prefer, you may contact Robert Folsom, 756-2126 for further information.

The show will provide an opportunity to actually see and compare the newest and the "old time" varieties of gladiolus. There will be expert glad growers on hand to answer any questions you may have.

Slide Show

Confused by the myriad of composites, especially at this season of the year? Don't despair, attend Bill Eisenlohr's shown on August 9 at 1:30 p.m. in Classroom C and all will be made clear. Mr. Eisenlohr has beautiful slides *and* besides their beauty they show the specific features used in keying composites. Free, all welcome.

Mycological Fair
August 17, 11 - 4:45 p.m.
John C. Mitchell Hall

Dahlia Show

The Denver Dahlia Society will present its annual dahlia show on Saturday and Sunday, August 23-24, 1980, at the Denver Botanic Gardens. The entries will be judged on Saturday morning, and the show will be open to the public from 1:00 p.m. to 4:45 p.m. on Saturday, and from 10:00 a.m. to 4:45 p.m. on Sunday.

Dahlias of all types and sizes will be exhibited, from the larger blooms, some as much as 12 inches in diameter, down to the smallest mignon dahlia, about an inch in diameter. There will be arrangements featuring dahlias, to show the versatility of the dahlia as a cut flower.

If you are a dahlia grower, you are welcome to enter some blooms in the competition. You need not be a dahlia society member. For more information, call the president of the Denver Dahlia Society, Robert Crawford (778-0822).

Mark the dates on your calendar. Bring your family and summer guests. We guarantee your time at the Botanic Gardens will be well spent.

Special Services

The guides have announced that during the month of August at 11 a.m. on Tuesdays, Wednesdays and Thursdays, volunteers will be stationed in the Lobby to provide information on conservatory plants for our many visitors. Short tours will also be provided.

Annual Report

Members have inquired about the striking cover of our Annual Report. The characters indicate "Shofu-En" (Garden of the Pine Wind) and were done by Professor Koichi Kawana especially for our publication.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$15.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 575-2547.



Green Thumb Newsletter



Number 80-11

November 1980

Classes

Beginning Wheat Techniques is full. Remember your embroidery scissors and join Mrs. Kline on November 5 at 9:30 a.m., Classroom B.

A new class beginning on November 29th will appear in the winter listing as a *Mini Course in Indoor Light Gardening*. This class, taught by members of the Indoor Light Gardening Society, will be offered on November 29, December 13, and January 10 from 9-12 in Classroom B. It is divided in the following manner: "How to Build an Indoor Light Garden" — determining the type of installation required to meet individual needs; designing a custom-made light garden; basic educational wiring methods and safety procedures; sources of supplies and equipment. December "How to Grow House Plants Successfully Under Artificial Lights" — facts of light for indoor gardeners; culture methods and techniques — potting, watering, fertilizing, light control, controlling insects and diseases; sources of supplies and equipment. January "How to Multiply Your House Plants" — methods of propagating house plants with emphasis on techniques especially applicable to indoor light gardens.

People may enroll in all three courses as a unit (\$20.00 for members, \$25.00 for non-members) or if you wish to sign up for one or two segments, the cost is \$10.00 for each, if a member, or \$12.50 for non-members.

Watch for your new List of Classes but sign up now for this offering.



Tempel Lecture

As mentioned in the October newsletter, plan to attend the First Annual Tempel Memorial Wild Flower Lecture to be presented by Mr. and Mrs. Vernon Tomppert on November 1 at 7 p.m. in John C. Mitchell Hall. All who have enjoyed previous shows by the Tompperts know what a spectacular multi-media presentation they give! Bring your friends for this outstanding evening in memory of a distinguished gentleman and a great lover of nature, Dr. Carl W. Tempel.

Christmas Sale Is Nov. 21 and 22



When Santa styles his whiskers the Gift Shop at Denver Botanic Gardens schedules its pre-Christmas sale.

November 21 and 22 are the dates for this 17th annual event. Again Boettcher Memorial Center at 1005 York Street will become Holiday Mall. Fragrant potpourris, herb vinegars, cherished books, and handcrafted treasures will be for sale in Mitchell Hall. Colorful dried blossoms, cones and pods, gift memberships and complimentary coffee will be found in the Lobby Court with many specially selected holiday gifts available in the year-round gift shop. Hours are 10 a.m. to 4:30 p.m. both Friday and Saturday.

YULETIDE TREASURES. Heritage wreaths range from mantle-sized to little tree ornaments. Napkin rings and decorative oval frames for favorite photographs are among many handcrafted items fashioned from natural materials. There will be tiny baskets of cheery arrangements for trimming the tree, as well as the tousle-haired choir boys and pony-tailed choir girls plus the diamond-dusted snow flakes that graced last year's Lobby Court tree.

FRAGRANCE GIFTS. The potpourri workshop has gathered a bounty of botanicals and tucked them into tranquility pillows, delicate sachets, and sumptuous boudoir pillows. Eighteen fragrances have been perfected for potpourris including a new scent named Dressage (rhymes with corsage) prepared especially for men. For children, tooth fairy pillows are enlivened with koala bears or tigers. Spices have been packaged in delightful Tiny Tins. Seasoned salt will be offered as well as the traditional frankincense and myrrh.

Rose petals will be available in bulk to mix with a selection of perfume essences, fixatives, and oils.

HERB VINEGARS. Again this season the ever-popular herb and tarragon vinegars have been carefully blended. Great stocking-stuffers and hostess gifts, about 3,000 pints have been bottled. Some epicures buy it by the case.

AUTUMN HARVEST. Colorful blue salvia, golden yarrow, silvery money plant; sweet gum balls, acorns and cones from great to small; star-studded stems of gasplant, giant heads of stars-over-Persia; huge palm fronds, and perky gatherings of dried flowers will also be available.

BOOKS. For Natives and Newcomers *From Cemetery to Conservatory*, the fascinating history of the site at Denver Botanic Gardens written by Louisa Ward Arps and a history of the organization in celebration of DBG's silver

jubilee, by Bernice E. Petersen, has been released especially for this sale. Previously published in series in *The Green Thumb* magazine and the 1975 Annual Report, this is their first publication within a single cover. The booklet contains additional unpublished historical photographs, drawings by Claude Hansen and a helpful index.

Roadside Geology of Colorado by Halka Chronic; *Handbook of Rocky Mountain Plants*, Ruth Ashton Nelson; *Meet the Natives*, M. Walter Pesman; *The Trees of Boulder*, the late Campbell Robertson; George Kelly's *Rocky Mountain Horticulture* and his other publications for this area on trees, shrubs, ground covers, and plants near Four Corners — these are a mere sampling of books for this area.

FOR CHILDREN. *Gnomes* is a charming piece of made-up reality written by Wil Huygen and wonderfully illustrated by Rien Poortvliet. (This gnomenclature in color is full of lore, history and fun.) Gnome figurines will also be offered. Tasha Tudor's many delightful volumes including *Take Joy* (things to do for a family Christmas), *Bedtime Stories*, *A Time to Keep*; and *Alpha-Bird-Ical Puzzle Book* by Persis Owen Hutton is another fun item.

BEAUTIFUL BOOKS. *The Country Diary of an Edwardian Lady*, written and illustrated by Edith Holden in 1906, has been recently published. *Nature Diary* by Janet Marsh is exquisitely illustrated and considers miracles and mysteries of the natural world.

CALENDARS, STATIONERY, AND PAPERS. Distinctive cards and note papers as well as gift wrappings and enclosures incorporate the fine illustrations from the Edwardian Diary described above, another series is in rich oriental design. Here, too, are watercolor reproductions of birds and animals on large notecards suitable for framing. Other stationery is embossed with sand dollars, mums, and roses.

Engagement calendars for 1981 focus on Colorado, wildflowers, Russell and Remington, Beatrix Potter, and Rockwell.

AMBER MAGIC. Lustrous amber with botanical inclusions has been shaped, polished and crafted into rings, pendants and earrings. Scientists believe this hardened fossil resin was formed some 40 million years ago and often encased the flora and fauna of an ancient forest.

JEWELRY. Among the other jewelry items are cloisonne necklaces, tiny crystal lavaliers, and the popular Navajo ghost beads of juniper berries.

NITE LITES. Translucent sea shells when attached to a small bulb become glowing "see shells." Handblown crystal sculptures of whales, snails, a variety of animals and angels with electrified wooden bases are lovely.

GIFTS FROM AFAR. The Flower Fairy series of fine porcelain plates and books were inspired by the paintings and poems of Cicely Mary Barker. The plates are fired and hand-numbered in Bavaria, the books are published in England. From Uruguay are many carved whimsical animals: moose, dodo birds, alligators and pigs. From the Orient are teapots, lacquerware, miniature folding screens; silk coin purses and disco bags, delicate scroll pulls, jade bonsai trees and intricately carved cork landscapes.

GIFTS FROM NEARBY. Local crafts include bonsai trees with preserved aspen leaves and Harriet Will's stained glass antique cars, fishermen, even sun-catchers for house plants. From nearby states come sculptures in

acrylic, magnificent porcelain birds, laser-carved walnut desk accessories; Isabel Bloom's garden sculptures of a happy seal, a contented frog, mother and child and other choice subjects.

BRASS IS EVERYWHERE. There are mission bells, windchimes, a menagerie, door knockers, and brass-handled walking canes.

Certificates from the Gift Shop, and of course, memberships in Denver Botanic Gardens are always welcome.

Gifts, whether handmade or selected, all have a hint of nature. Naturally, all proceeds benefit Denver Botanic Gardens.



Happenings at the Gardens

REPORT, WILDFLOWER TRIALS

The August Newsletter described Applewood Seed Company's new bulk wildflower seed mixtures that are being tested along Josephine Street on the eastern and southern edges of the community gardens. Two mixes were tested for dry and moist conditions; both were planted in full sun. The dry mix was planted at the end of April; seeds were covered with a thin layer of Redi-Earth, a commercial planting mix made of finely milled sphagnum peat moss, vermiculite and nutrients. Seed germination was lower than expected because it was difficult to keep the planted areas moist. This was primarily due to continual air movement caused by the heavy traffic along Josephine Street. Efforts to compensate for this problem were made throughout the summer by experimenting with various mulches, namely, 1½ inch gravel, fir bark and wood chips. Sowing directly into a thin layer of these materials significantly improved germination because of increased moisture retention. In addition, the mulches provided some protection for the young seedlings until their root systems were well established. When any one of these mulches was applied around older plants, growth improved because of less competition from weeds and higher retention of moisture. Once the wildflowers were established, they were watered weekly because of the sandy soil and continual air movement; this would not be necessary in a more favorable environment.

In the dry mix, cornflower, California poppy and baby's breath bloomed throughout July and August. The overall impression was a mass of blue with a splash of orange and white. On close inspection, one saw an occasional blooming plant of prairie aster and poor man's weatherglass; however, neither was tall nor profuse enough to be seen from a distance. Perennials getting started were wild blue flax, yarrow and gaillardia, which were about 4 inches tall by mid-September.

One small section was planted with moist mix on July 1; the seeds were sown into a layer of fir bark. Several species did not germinate, probably because of high-temperature dormancy. In fact, germination of this mix was significantly higher in other Denver-area trials where seeds were planted on about the same date, but in cool, shady locations. Scarlet flax was the only annual that

LIBRARY LINES

VOL. 3 - NO. 5
NOVEMBER, 1980

A BIMONTHLY NEWSLETTER OF THE HELEN FOWLER LIBRARY OF DENVER BOTANIC GARDENS

An inventory of the library book collection will be started on 15 December 1980 and completed before the new year. The main purpose of the inventory is to become aware of losses which have occurred since the last inventory in late 1978. The inventory will also allow checking the physical condition of the books. The library will be closed to the public on week days during this period.

Bicknell, Andrew. DR. GREENFINGER'S Rx FOR HEALTHY, VIGOROUS HOUSEPLANTS. New York, Crown, 1980. SB 419 B5456. \$12.95.

Dr. Green is alive and well with many good pointers to fulfill the expectations of the title. Excellent two tone line drawings illustrate this very practical volume and for once people are considered along with the plants they grow. The selectivity of chapter subjects and the broad glossary make for easy reading. This book will lead you to observe your plants in order to take better care of them.

Andrew Pierce.

Measures, David G. BRIGHT WINGS OF SUMMER. Englewood Cliffs, N. J., Prentice-Hall, 1976. QL 544 M4378. \$12.95.

A truly different butterfly book has been written by an artist rather than a scientist. Not the usual identification manual nor the flashy color picture book to capture the eye, this author catches the spirit of the butterfly, describing its daily existence to its death. The fine color plates included deal with butterfly behavior. The many sketches and paintings by the author smack of impressionism, but just read how he paints them! Though the butterflies discussed are English species, we have similar species of like behavior in Colorado. This is a delightful book for everyone from the curious lay person to the most astute lepidopterist.

O. O. Otto

Ledbetter, Gordon. WATER GARDENS. W. W. Norton, 1980. SB 423 L4435. \$13.95.

Gordon Ledbetter is a gardener and landscape planner who lives and works south of Dublin, Ireland. His book is a meticulously ordered and beautifully illustrated guide to planning garden ponds of all sizes and characters. While much of the flora and fauna mentioned might have to be reconsidered for

adaptability outside Irish climes, the book is exceptionally useful for the priorities involved in pond planning. Most importantly, it imparts a mystique and frame of mind for pond lovers which is infectious and delightful. Certainly any garden planning experience would be enriched by this volume.

Pamela Beardsley.

Davis, John. DOUGLAS OF THE FORESTS. Seattle, University of Washington Press, 1980. QK 31 D6 D249. \$14.95.

In this book John Davies has re-edited an earlier book consisting of the North American journals of David Douglas, early English botanist and to a lesser extent, ornithologist.

Under the auspices of the Royal Horticultural Society, in 1824, Douglas ships aboard a vessel which sails around Cape Horn and northwards to the Columbia River near the west coast of what now are the states of Washington and Oregon. His travels, collections, contributions of botanical introductions and second voyage are described in a most readable account.

C. H.

Brown, George E. SHADE PLANTS FOR GARDEN AND WOODLAND. London, Faber and Faber, 1980. SB 434.7 B867. \$27.00.

The first part of this book is devoted to a discussion of shade and its valuable influence on different kinds of plants. This includes different kinds of shade conditions from dappled to full shade, also how these vary throughout the season.

The author combines botanical knowledge with a careful consideration of garden planning, seeing "shade gardening" as a pleasure rather than a problem. He points out how flowers are often displayed at their best in some degree of shade.

The second part of the book consists of an alphabetical listing of plants and how they adapt to different shade conditions.

Claude Hansen.

Dubos, Rene. THE WOOLING OF EARTH. New York, Charles Scribner's Sons, 1980. QH 75 D836. \$8.95.

The author of this book is a well known scientist who has written several books pertaining to nature, and who has won many awards for his scientific contributions. In this book, he presents a somewhat optimistic view about the much discussed environmental crisis.

He points out that ever since the beginning of history all animals including man have been molding the environment to suit their needs. These changes have not all been detrimental to nature. Many of the world's most admired landscapes have been man-made. The statement that "Nature knows best" is open to question. Nature itself has often been destructive as in cases of volcanic eruptions, floods, forest fires and severe storms. Nature has a remarkable power of resilience that erases all the ugly scars in time, often resulting in an improved landscape.

This book deals with many phases of molding the earth to suit the needs of man without destroying it. The author's main concern can best be expressed in his own words. I quote from the final chapter: "With our knowledge and sense of responsibility for the welfare of human kind and the Earth, we can create new environments that are ecologically sound, aesthetically satisfying, economically rewarding, and favorable to the continued growth of civilization. But wooing of the Earth will have a lasting successful outcome only if we create conditions in which both human kind and Earth retain the essence of their wildness."

Hazel Kellogg.

Metcalf, Edna. THE TREES OF CHRISTMAS. Nashville, Tenn., Abingdon Press. 1979. GT 4989 M48 1979. \$7.95.

In this soft cover reprint of the 1969 edition, the photographs of 23 beautifully ornamented Christmas trees are reproduced inviting the reader to learn the holiday traditions of other lands and peoples. Instructions and diagrams accompany the descriptions.

Here is an invitation to be creative, inspired by this treasure of glittering, delicate, folksy, whimsical and sophisticated ornaments and trees ranging from straw to gingerbread.

Frances Hansen.

Clegg, Peter and Derry Watkins. THE COMPLETE GREENHOUSE BOOK. Charlotte, Vermont, Garden Way Publishing, 1978. SB 415 C5444. \$9.95.

Any book that professes to be complete is, to my way of thinking, immediately suspect. While this book is not complete in every respect, it does cover the subject nicely and would be an excellent first choice for someone contemplating the sometimes considerable investment involved in a greenhouse. Most areas of greenhouse construction and operation are discussed with an emphasis on solar or heat retentive construction.

Two areas of the book deserving special mention are the listing of bibliographies,

sources and references at the ends of chapters and the excellent diagrams and pictures throughout the book.

J. B.

Fontanetta, John and Al Heller. BUILDING AND USING A SOLAR HEATED GEODESIC GREENHOUSE. Charlotte, Vt., Garden Way Publishing, 1979. SB 416 F657. \$8.95.

You want to build a greenhouse but don't know what design to use or how to construct it? This book makes a convincing argument for the geodesic dome as well as giving complete instruction on construction.

The authors explain how to choose the best site for maximum solar exposure. Precise instructions on construction, time and cost involved, plus descriptions of materials recommended are all to be found.

Also included are chapters on gardening in the dome, how to use it as a supplementary heating source and several other options. These chapters are a bit weak but do list additional sources for anyone needing further information.

If you see a greenhouse in your future, spend some time with this book. It's well worth it even if geodesic domes are not your final choice of design.

John Brett.

Mayhew, Ann. THE ROSE: MYTH, FOLKLORE AND LEGEND. New York, Walker, 1979. SB 411 SB 411 M3974. \$17.95.

Remember Snow White and Rose Red? They are here, along with a cast of thousands... all part of the heritage of the rose. From fairy tales and poetry to history and horticulture, a selection of varied views of that most popular of flowers. Follow Josephine in her rose gardens at Malmaison - or collect the fall bounty of rose hips and stir up a jelly or syrup. Lots of vignettes of the rose's part in the human saga, lavishly illustrated by Michael Pollard. Brief bibliography.

Louise Jarvis.

Birren, Faber. COLOR AND HUMAN RESPONSE. New York, Van Nostrand Reinhold, 1978. QP 483 B5774. \$11.95.

For anyone especially interested in the subject of color, this book is a must, for it contains "the largest fund of information ever assembled in one volume on the subject." Included are historical references as well as the latest scientific data such as the biological effects of light and color on plants and animals.

Claude Hansen.

bloomed because the mix was planted late in the season. The following species were well established by mid-September: scarlet flax, chicory, oxeye daisy and lace leaved coreopsis.

We have learned that starting a wild garden may be uncomplicated, or may require the use of special mulches, depending on environmental conditions. Also, it is preferable to plant annuals that are low-growing so they do not obscure other blooming plants or block out sunlight from slower-growing perennial species. Once established, low maintenance is a big advantage in terms of no mowing and minimal watering, provided species have been selected that are well suited to the area. Both wildflower mixtures are available at the Denver Botanic Gardens Gift Shop.

—Gene Milstein

Gardening Tips for November

This has been one of the most delightful falls we've had on record. I can't remember when the fall colors, particularly in the aspen and mountain maples, have been so brilliant. Perhaps Mother Nature is trying to make up for the miserably long, snowy winter we had; the very wet spring and the sizzling, hot summer. The prolonged dryness, however, should serve as a reminder of the kind of fall we had last year and if history repeats itself, we could be in for more severe winter injury to plants due to desiccation.

Keep in mind that just because we have snow, that does not mean that we have moisture in the soil and the roots of many trees and shrubs can suffer. Before the ground freezes completely, and if you have not already done so, be sure to give your trees and shrubs a good, deep watering. The best way to do this is by using a Ross Root Feeder or some other hose-attached soil needle. Make lots of holes but don't leave the device in one spot for more than a minute or so.

FORCING BULBS

One of the most fun and rewarding indoor garden occupations is forcing bulbs into bloom for winter enjoyment. You need not be an expert to do it, but a few steps should be followed to insure success.

Before going into the forcing procedure, let's first examine the life cycle of a bulb to better understand how bulbs can be forced. First of all, a bulb is really a bud on a very short stem with special food-storing capabilities. Under proper conditions the "bud" forms roots shortly after planting, enabling the bud, which already contains the flowers and leaves in miniature form, to elongate into a full-fledged plant.

Some bulbs, like the paper white narcissus, are ready to grow without any special treatment. Simply place them in moist sand, gravel or soil and watch them develop into a flowering plant in as little as six weeks. Other bulbs, such as most tulips, hyacinths and daffodils will require a cold treatment in order to break a natural dormancy just as the buds on outdoor, woody plants require. To force the bulbs, they should be planted in pots containing moist, well-drained soil and kept in a cool area (40°F. is best) for

several weeks. Most tulips should be given 13-15 weeks of cold treatment; hyacinths and most daffodils need only 6-8 weeks. Most important is keeping the soil moist, but not overly wet during the cold period.

After the cold period, the pots should be moved to a place where room temperature is about 60° - 65° F (such as a basement) until the top growth is about 3 or 4 inches tall. They then can be moved to a brighter and warmer room for forcing into bloom.

It is also possible to buy bulbs already pre-treated for forcing. Such bulbs should be checked carefully, however, before purchase. Avoid bulbs that have already put out top growth and those that are bruised or showing fungus growth on the surface.

DELAY EARLIEST BLOOMERS WITH MULCHES

Plants that tend to bloom too early in spring can be delayed as much as two weeks by applying a mulch to the soil surface as soon as the ground is thoroughly frozen. For best results, use a mulch material that is coarse and does not tend to cake or compact. One of the best is wood or bark chips. These can be applied to a depth of 4 or 5 inches over the root zone of the plants or, in the case of early bulbs, over the entire flower bed. The mulch acts as an insulation to prevent an early thaw of the soil. The mulch will also reduce water loss from the soil and thus, reduce the need for supplemental watering during "open", dry periods in February and March.

HOUSE PLANTS

Now that cold weather is here and our home furnaces are fired up, it is a good idea to watch your houseplants carefully. Usually, the humidity in the home drops drastically when the furnace comes on, particularly if you have forced air heat. At this time of year, sunlight is of shorter duration although it can be just as intense in early morning and late afternoon. The reduced light tends to reduce the demands of a plant for water, the reduced humidity will *increase* water demands. In a sense, houseplants become "confused" and begin to develop problems such as leaf drop and browning of the leaf margins. To avoid this, try *gradually* reducing the frequency of watering to help "harden" the plants. When you do water, however, apply water liberally so that a quantity will flow out of the drainage holes in the bottom of the pot. This surplus water should be discarded to avoid it being drawn back into the pot and thus, reduce chances of soluble salt accumulation. (The white crust seen on the soil top and along the pot rim.) Most important is to avoid overwatering (too frequent) and keep houseplants away from heaters and cold drafts.

A reminder: As mentioned before in this newsletter, Colorado State University has initiated a new program called TELETIPS. By calling a toll-free number or a special number for metropolitan Denver residents, a wealth of free information is available on a variety of subjects. A printed brochure is available that lists all the topics and tape numbers. If you will drop me a line, requesting a copy of this brochure, I will be happy to supply it. Mail your request to 909 York, Denver, CO 80206.

Another reminder: Now is a good time to clean up elmwood debris. All elm wood having bark attached should be destroyed before spring to avoid emergence of the elm bark beetle, carrier of Dutch elm disease.

HAPPY THANKSGIVING!

Dr. J. R. Feucht

Calendar of Events



November 1980

- 1)* 9:30 a.m. Education Building – Classroom B
- 1)* 1:30 p.m. Education Building – Classroom C

- 4) All Day Education Building – John C. Mitchell Hall
- 5)* 9:30 a.m. Education Building – Classroom B
- 5)* 1:00 p.m. Education Building – Classroom C

- 5)* 1:30 p.m. Botanic Gardens House – Dining Room
- 5)* 4:00 p.m. Botanic Gardens House – Dining Room
- 5)* 7:00 p.m. - Education Building – Classroom B
- 9:00 p.m.
- (This class continues every Wednesday through November 19)
- 6)* 9:30 a.m. Botanic Gardens House – Main-Dining Rooms
- 6)* 7:30 p.m. Education Building – Classroom C

- 6)* 7:45 p.m. Education Building – John C. Mitchell Hall
- 7)* 9:30 a.m. Education Building – Classroom B
- 7)* 11:00 a.m. Botanic Gardens House – Main-Dining Rooms
- 8)* 8:00 a.m. Education Building – Classrooms B & C
- 8) 1:30 p.m. Education Building – Classroom A
- 10)* 4:00 p.m. Botanic Gardens House – Dining Room
- 10)* 7:30 p.m. Education Building – John C. Mitchell Hall
- 11)* 12:00 noon Education Building – Herbarium
- 11) 7:30 p.m. Education Building – Classroom A
- 12)* 9:30 a.m. Botanic Gardens House – Main Room
- 12)* 12:00 noon Botanic Gardens House – Dining Room
- 12)* 1:00 p.m. Education Building – Classroom B

- 12)* 1:30 p.m. Botanic Gardens House – Dining Room
- 14)* 9:30 a.m. Education Building – Classroom B
- 14)* 7:30 p.m. Botanic Gardens House – Main-Dining Rooms
- 15)* 9:00 a.m. Education Building – John C. Mitchell Hall
- 15)* 9:00 a.m. Education Building – Classroom B

- 18)* 12:30 p.m. Botanic Gardens House – Main Room
- 18)* 7:30 p.m. Education Building – Classroom B
- 19)* 12:00 noon Botanic Gardens House – Dining Room
- 19)* 1:30 p.m. Botanic Gardens House – Dining Room
- 19) 7:30 p.m. Education Building – Classroom A
- 20)* 4:00 p.m. Botanic Gardens House – Dining Room
- 20) 7:30 p.m. Education Building – Classroom B
- 20)* 7:30 p.m. Botanic Gardens House – Main-Dining Rooms
- 21)* 7:30 p.m. Education Building – Classroom C
- 21) All Day Education Building
- 22) All Day Education Building

- 24)* 9:30 p.m. Botanic Gardens House – Main Room

Gloxinia Gesneriad Growers
Dr. Tempel Annual Memorial Lecture –
Mr. & Mrs. Vernon Tomppert

GENERAL ELECTION DAY
 “Beginning Wheat Techniques” – Jean Kline
 “Tropical Plants of the Conservatory” –
 Mrs. Peg Hayward
 Propagation Committee Meeting
 Planning Committee Meeting
 “Beginning Greenhouse Management” –
 Mrs. Marsha Celesta

Central District Presidents Council
 “Landscape Horticulture for the Homeowner”
 Mr. Al Rollinger, Mr. Larry Watson
 Denver Orchid Society
 Potpourri Workshop
 Civic Garden Club
 National Science Foundation
Film: “At the Crossroads”
 Executive Committee Meeting
 Colorado Mycological Society
 Herbarium Committee Meeting
 Colorado Cactus & Succulent Society
 D.B.G. Guild
 P. R. and Development Committee Meeting
 “Tropical Plants of the Conservatory” –
 Mrs. Peg Hayward
 Propagation Committee Meeting
 Potpourri Workshop
 Denver Dahlia Society
 Women in Mining
 Hi Country Judges Workshop

Rocky Mt. African Violet Council
 Denver Bonsai Club
 Colorado Garden Show, Inc.
 Propagation Committee Meeting
 American Rock Garden Society
 Chatfield Committee Meeting
 Indoor Light Gardening Society
 Denver Men’s Garden Club
 Denver Botany Club
GIFT SHOP CHRISTMAS SALE
GIFT SHOP CHRISTMAS SALE

Ultra Violet Club

Calendar of Events for November (continued)

- 25)* 12:00 noon Education Building — Herbarium
25)* 4:00 p.m. Botanic Gardens House — Main Room
26)* 1:30 p.m. Botanic Gardens House — Dining Room
27)
28)* 9:00 a.m. Education Building — John C. Mitchell Hall
29)* 9:00 a.m. — Education Building — Classroom B
12:00 noon

DECEMBER

- 2)* 1:00 p.m. Botanic Gardens House — Dining Room
2)* 7:30 p.m. Education Building — Classroom B
3)* 1:30 p.m. Botanic Gardens House — Dining Room
3)* 4:00 p.m. Botanic Gardens House — Dining Room
4)* 2:00 p.m. Botanic Gardens House — Dining Room
4)* 7:45 p.m. Education Building — John C. Mitchell Hall
5)* 11:00 a.m. Botanic Gardens House — Main-Dining Rooms
6)* 9:30 a.m. Education Building — Classroom B

**Enrollees or Members only*

Herbarium Committee Meeting
Board of Trustees Meeting
Propagation Committee Meeting
THANKSGIVING
Ikebana International
“Indoor Light Gardening” — Class conducted
by members of the Society

Editorial Committee Meeting
Denver Bonsai Club
Propagation Committee Meeting
Planning Committee Meeting
Ikebana International Christmas Tea
Denver Orchid Society
Civic Garden Club
Gloxinia Gesneriad Growers

Tributes

In memory of Loren C. “Buster” Crabb
Patricia LaNoha

In memory of Grace Seavee Robinson and
William H. Robinson, Sr.
William H. Robinson, Jr.
Richard S. Robinson
George J. Robinson

In memory of Earl J. Sinnamon
Mr. & Mrs. Harley G. Higbie
Mr. & Mrs. R. A. Kirk
Nancy and Bob McHale
Southern Hills Garden Club
Mrs. William G. Temple
Mrs. Morley B. Thompson

Donations have been received from the following
friends:

American Auto Tours, Inc.
Beatrice Foods Co.
Colorado Watercolor Society
Mrs. Donald Estey
The Eugene A. Freund and Adlyne Freund
Foundation
Mrs. Dorsey Gale, plants
Susan A. Hill, a Rototiller
Ikebana International—Chapter 95 (Colorado
Springs)
KHOW Radio, air time
Matthaei Botanical Gardens, bromeliad plants
Mr. and Mrs. Michael McLaughlin, a word processor
Frederick W. Mimmack, M.D.
The Trust Group
Jack Verschoor, sodium vapor lamps
Jessica Yokomizo

Free Film, November 8, 1:30 p.m. Classroom C

One of the donations this year was an award-winning film “At the Crossroads” prepared and presented by Marty Stouffer Productions, Ltd. of Aspen. This explores wildlife’s struggle for survival in modern America. Many endangered birds and mammals are shown and interviews with prominent biologists examine our current problems and offer possible solutions. All welcome.

Botany Club

On November 21 at 7:30 p.m. in Classroom C, Bob Heapes will present a talk entitled “Flower Highlights of the Ponderosa Zone.” Mr. Heapes, an active member of the Colorado Native Plant Society, is currently illustrating a book on plains flowers. All welcome.

Welcome

Our members will be pleased to know that Ruth Hawkins has rejoined the staff at Denver Botanic Gardens. Ruth, who worked here in the mid-1970’s, will be serving as membership secretary.

ANYTHING has them and now we do too!

Look for blank books in the Gift Shop. These floral design and fabric cover editions are the handiest items — to keep gardening notes, to serve as a diary, for favorite recipes — whatever (and they are reasonable too).



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$15.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 575-2547.



Reminder

The Helen Fowler Library will be closed from December 22 to January 3 for its annual inventory.

Welcome New Members

Lelia E. Adams	Irene W. Lenicheck
Tami Adams	Mrs. & Mrs. Johnston Livingston
Dr. & Mrs. Bruce Albrecht	Donald L. McIntosh
Darlene Anderson	Mrs. Jessie T. Merrell
Kristy Anderson-Moore	Max A. Nagler
Clark Ball	Susan Newman
Elle Becker	Dorothy E. O'Connell
Mr. & Mrs. Lewis M. Bordon	Mr. & Mrs. Randy L. Parcel
David Choate	Michael F. Partridge
Mrs. D. M. Chisholm	Susan Permut
Deborah Comfort	Mr. & Mrs. Robert M. Raymond
Jerry H. Cunningham	Carolyn Risley
Marian K. Cusic	Richard S. Robinson
Michael C. Deeter	William Hedges Robinson, Jr.
Naomi DiAnnie	Dianne E. Shaw
Mr. & Mrs. David A. Downs	Karen L. Schnaidt
Mrs. Richard Eber	Kathleen M. Sheehan
Barbara C. Esten	Jane O. Shelley
Flower Connection	Allison Sherman
Elizabeth & Gene Fowler	Joan P. Smith
Ivah Getchell	Dr. Martin Spector
Mrs. Francies H. Gibbs	William & Trish Strunk
Ida Mae Hadley	Teresa Sydow
Kathy Hamilton	Lynn Tharp
Emily A. Haremza	Ann R. Timmins
Helen J. Hawkins	Mr. & Mrs. William R. Turner
Erna A. Heggemeyer	Diane D. Ullman
T. K. Hittle	William J. & Dorothy VanDyk
E. Cecile Hogate	Verne Welsh
Mrs. Paul Hockstad	Joyce Whitcomb
Mr. & Mrs. Wesley S. Hupp	Eleanore Williams
William S. Jackson Family	Dr. James M. Woodward, Jr.
Thomas R. Jump	David N. Wortman
Mrs. F. B. Kimmel	Reg Wyatt
Dotty Klecker	Toshika Yoshida
Mr. & Mrs. Joseph Kulik	Sandar Zeitlin

Let's continue to build our membership! Invite a friend to join or give a gift membership.



You are Invited!

The Western History Department of the Denver Public Library will host a wine and cheese party on November 13 from 7 to 9 p.m. at 1357 Broadway (fourth floor). This will be a great opportunity to learn more about the history of the Botanic Gardens area and will also provide a chance to explore the back rooms of the Western History Department. R.S.V.P. to Carol Jones at 355-7209 or 573-5152 X265.

Delighted to be asked

Gayle Weinstein, the Botanist-Horticulturist in charge of the ground covers and turf plots, recently received a letter from a plant breeder at George W. Park Seed Co., Inc. In it she was asked for cuttings or seeds of *Artemisia caucasica* and *Veronica pectinata* to plant in their trial area.

Denver Botanic Gardens, Inc.

909 York Street
Denver, Colorado 80206
303-575-2547

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Green Thumb Newsletter



Number 80-12

December 1980



Merle Moore New Director

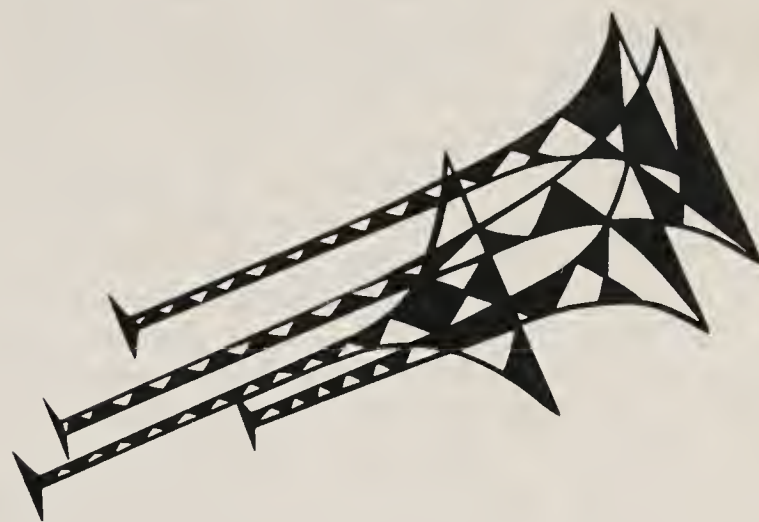
Members will be pleased to know that Merle M. Moore has been selected as the new director of the Denver Botanic Gardens. Mr. Moore joined the staff as Assistant Director in August 1978 and in August of this year, on the retirement of Dr. Gambill, assumed full responsibility as Acting Director. Mr. Moore is currently serving as President of the National Council for Therapy and Rehabilitation Through Horticulture headquartered in Alexandria, Virginia. Other organizations to which he belongs include the American Association of Botanical Gardens and Arboreta, the American Rock Garden Society, the Colorado Nurserymen's Association, and the Royal Horticultural Society of Great Britain.

We all join in congratulating Merle and look forward to many productive years under his leadership.

Herald the Holidays

One of the annually anticipated treats is to visit the Lobby Court and admire the decorations this month. The traditional poinsettias will be there as will rosemary. This holiday plant may not come to mind as rapidly as ivy or holly but it has been considered a token of good luck since earliest times. It was used to garland the boar's head at the Christmas feast and was strewn around churches to guard them and all within, from harm. Of course, Avalonne Kosanke and her committee have worked months to design and decorate the tree. A special event, for members only, will provide the perfect opportunity to admire their handiwork, greet old friends and meet new and enhance the festive mood of the season.

**HARK !!
DBG IS HERALDING IN THE
CHRISTMAS SEASON !!!
AND YOU ARE INVITED !!!**



The Membership Committee of the Denver Botanic Gardens cordially invites you to join them in ushering in the Holiday Season. This will be a joyous occasion with trumpets, brass and choir ensemble from the University of Colorado at Denver. On Sunday, December 14th, starting at 4:45 P.M., the UCD Brass Sextet, directed by Dr. Walter Barr will "Herald in the Christmas Season" in the Lobby Court. While enjoying their music, you will be able to enjoy all the beautiful decorations and the unique Christmas Tree decorated by Avalonne Kosanke. After admiring and browsing for 45 minutes, everyone will gather in Mitchell Hall for a concert by the UCD New Singers I and II, directed by Ron Stein. The program will close with a combination of the brass and choir, ending at 6:15 P.M. There will be refreshments following and time to visit with members and the musicians. Reservations are needed by Dec. 8th please — 575-2547. Plan now for this festive beginning of the Yuletide Season, Dec. 14th, 4:45-6:15 P.M. Admittance by membership card.

Bermuda in Spring

Members will have received the announcement concerning the next tour to be offered by the Gardens "My Trip to Bermuda and Philadelphia," April 21 - May 2. Andrew Pierce, the Superintendent of our Conservatory who lived in Bermuda for 13 years, is a most knowledgeable guide with many contacts so that our tour will see areas not generally visited by tourists. The same opportunity, that of visiting private gardens, will be provided in Philadelphia — along with a full day at Longwood Gardens and another day at Winterthur. Write Jim Holme, P.O. Box 949, Indian Hills, CO 80454 for further information.

Gardening Tips for December

History does repeat itself, even when it comes to weather conditions. In looking back over the years of Green Thumb columns, I find that I could almost reprint the one that appeared in December, 1974 with only a few minor modifications. That was a year when we had a glorious spring and could have planted our petunias in mid-April. The difference, of course, is that this year we had a very wet spell in May and in 1974 it was hot and dry. Other than that, the seasons seem to be about the same — hot and dry, followed by a dry, prolonged fall that beat nearly all records.

Weather bureau indications show that the average frost (clean-up type) occurs about October 10. This year we had an extended fall season, although it was interrupted, not by a frost, but rather a freeze. This kept the leaves from falling from a lot of trees because it interfered with the normal leaf-drop process called abscission.

Abscission is a chemical process which actually begins on a gradual basis in late summer as night time temperatures begin to get cooler and day-length shortens. These changes trigger chemical reactions in the leaves which act as "message centers" and "tell" the plant to get ready for winter. Cooler temperatures seem to be the primary influence on the leaf-drop process with the exception of plants like sumac, Amur maple, ash and others that develop fall color very early and drop their leaves quickly, once the color has formed.

The process of abscission is quite a remarkable phenomenon. When the leaves send the chemical message to begin the abscission process, the veins carrying water and nutrients to the leaves become walled-off at the point where the leaf is attached to the stem. Soon, the cells in the same area form a line of separation, known as the abscission zone. This is followed, in most cases, by a physical dissolving of the cell walls in the abscission zone which causes the leaf to drop.

If the process is interrupted before the abscission zone is completely formed, as was the case with many trees this year, leaf drop is delayed or the leaves may remain on, in a frozen state all winter. It also helps to prolong the fall color of those trees and shrubs that had turned. The Bradford callery pear was among the most striking for fall color this year, still showing its burgundy foliage into mid-November. Weeping willow, among the last to change color, developed a brilliant, golden-yellow this year. This species is often caught by a severe freeze or frost and turn brown instead.

Selecting your Christmas Tree

If you're planning to select your Christmas tree, here are some things to look for to ensure a healthy tree, whether it is a cut or a live one, and one that will also have less tendency to dry up and become a fire hazard.

If you use a cut tree, avoid spruce of any kind because they tend to dry up quickly and drop their leaves. They not only become a fire hazard, but create a difficult clean-up job later on. The best cut trees are true fir, sometimes sold as a Colorado fir, Douglas-fir and the shorter-needed pines such as pinyon. While you may pay more, it is best to try to purchase from a nursery or tree lot which sells Colorado-cut trees. They are generally much fresher than trees which are imported from Christmas tree plantations in the midwest.

When selecting your tree it is a good idea to examine the branches carefully for small breaks caused by the bundling when they are shipped. Small breaks in branches will cause an early dry-up, at least of part of the tree. You can also tell about the dryness by tapping the base of the tree sharply on the ground. Watch for signs of needle drop. If a lot of needles drop, it is an indication that the tree is drying up and would not be suitable.

If you plan to use a live Christmas tree to be planted out later, you must prepare the planting area now, providing the ground isn't frozen. Get the hole dug and keep it covered with planks, saving the back fill and protecting it from freezing. A live tree should be kept in the home no more than three days. Otherwise, it will tend to break dormancy and cannot be moved outdoors until freezing weather has passed.

If you want additional information on Christmas trees, Colorado State University offers free advice on the subject by simply calling TELETIPS — dial 825-1558 (Denver residents only) or 1-800-332-2473 for Colorado residents outside the Denver area. Request the tapes on selecting Christmas trees, both cut and live.

If you are interested in gardening and working with people, you might also be interested in serving as a volunteer in one of the CSU County Extension offices as a Master Gardener. Free training for Master Gardeners begins in late-January but applications are being accepted now. Applications are taken by your local county Extension office but if you need additional information, don't hesitate to call this office (355-8306) and we'll direct you to the proper source.

Dr. J. R. Feucht

Welcome, New Members.

Dr. T. W. Adams
Juris and Vija Berzins
Mrs. Jean D. Bowen
David W. Bourcier
Edith H. Brown
Mrs. R. J. Burnside
Melanie Burrell
Mr. and Mrs. Frank Campbell
Beatrice B. Clawson
Olivia Cohen
Stewart Cosgriff
Janice A. Cox
Mrs. Don Dalby
Jane DeMerritt
Mr. and Mrs. James A. Erickson
Mark Esterl
Jacob H. Feichter, Jr.
Ben Fischer
Marilyn C. Foster
Susan E. Fusick
Christine M. Gray
Mrs. Frances Grebe
Neil L. Guard
Paul G. Harrington
Richard E. Hartman
Lola E. Henson
Judy L. Hertz
Eleanor Hugins
Carole A. Hynes
Mrs. H. C. Ingersoll
C. Walter Jones
John C. Krenetsky
Jeanne Labuda
Linda K. Link
Barbara McDonald
Mrs. Edith S. Milam
Mr. and Mrs. Bruce D. Moodie
Cynthia Moore
Donald E. Moore

Thank You



Green Acres Turf Farm, Inc. of Henderson, for the donation of 2250 sq. ft. of sod for the Japanese Garden, being installed by K. Kawahara, Gardener Specialist.

Susan A. Hill for the donation of a Troy-build Rototiller, seen here in the capable hands of Frank Chavarria, Gardener Foreman.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$15.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 575-2547.



F. J. Moore
 Mrs. Frank Morison
 Charles R. Nash
 Nelissa Neumiller
 F. Raylene Owen
 Mary L. Parmelee
 Mary R. Payson
 Gladys R. Peterson
 Mary E. Picardi
 Emily Pumphrey
 John Sheehan
 Jody Smith
 Karen E. Smith
 Mr. and Mrs. Sidney Speil
 Mrs. Gwen Squire
 Emilia Steeghs
 Peggy Sunshine
 Sally E. Swartz
 Allan R. Taylor
 Mrs. Scott Tegtmeier
 Dorothy Vetter
 Mr. and Mrs. David Voth
 Janis A. Warner
 Laura Weese
 Mrs. Paul G. West
 Mr. and Mrs. Henry M. Wheelwright
 Ed Willett
 Deborah Wine
 Dorothy B. Wilson
 Dorothy C. Wood
 Betsy R. Wolf
 Patti and Andy Wolfe
 Mr. and Mrs. C. H. Yarrow
 Joan T. Young

Let's continue to build our membership! Invite a friend to join or give a gift membership.

A Gift for the Person Who has Everything

Give a membership at the Denver Botanic Gardens. Benefits include:

- 1) Twelve issues of the *Green Thumb Newsletter*, with monthly gardening tips for the Denver area and the complete monthly program of the Gardens; six issues each of *Library Lines* and the *Jolly Green Gardener*.
- 2) Four issues of the *Green Thumb* magazine with a wide variety of highly readable articles of lasting interest to plant lovers in the Rocky Mountain region.
- 3) The privilege of checking out books from the Helen Fowler Library for your own personal use.
- 4) Discount of up to 30% on courses offered by the Denver Botanic Gardens.
- 5) Opportunity to participate in a wide range of activities sponsored by the Denver Botanic Gardens and its affiliated organizations.

Another Great Holiday Gift Idea!

Colorado Homes & Lifestyles, a beautiful new color magazine, is offering a special, one year - 6 issues, reduced subscription rate of \$8.00 (reg. rate: \$12 on Jan. 1) to members and friends of the Denver Botanic Gardens. The first issue will be out December 1, 1980, and will have sections on homes, gardening, plants, decorating, food, recipes, entertaining, historical homes, and landscaping relating only to Colorado.

If we receive your subscription no later than December 20, we will send a gift card to the recipient with your holiday compliments.

Around and About the Gardens

Because they are unaware of its presence, few visitors to the Gardens ever see the sunken garden on the east side of John C. Mitchell Hall. But those who make the effort will find it more than repaid in the variety of plant material — some native to wetland areas, some to drylands — with which they can become familiar in this small space.

Curlleaf Mountain Mahogany, (*Cercocarpus ledifolius*), for example, tall shrubs of very dry climates, frame the River Birch, (*Betula nigra*), a tree of stream banks and bottomlands. Pinyon Pine, (*Pinus cembroides edulis*), native to the semi-arid regions of the west are side by side with a native northeastern species, Eastern White Pine, (*Pinus strobus*). Quaking Aspen, (*Populus tremuloides*), small trees that often grow on moist slopes and in damp gulches, here grow as companions with Staghorn Sumac, (*Rhus typhina*), ordinarily found in dry, sandy areas.

Going on a bit further, visitors will notice the reddish brown buds of the Aspens: yesterday becoming tomorrow, the undeveloped leaves and stems of next spring. The Staghorn Sumac, its stoutness most apparent now that the foliage of spring and summer are gone, can be seen in all its brown and hairy-stemmed glory. Compare the Eastern White Pine to the Pinyon Pine. The Eastern White Pine has five, finely textured needles to a bundle; the Pinyon Pine has two. Also, keep an eye out for the beautiful brown to tan checkerboard buds. Add to your look-for list, Curlleaf Mountain Mahogany will still be clothed in its dark, leathery leaves, most of which remain throughout the year. Look, also, for the contrast of the bark of the River Birch: cinnamon brown, softened by rose colored hues.

Before you leave, one last observation to make at the sunken garden: a 3 foot by 3 foot planter containing a two foot Ponderosa Pine, (*Pinus ponderosa*), a tree with a potential height of 40 feet or more.

All this and more to be seen this month, just east of John C. Mitchell Hall.

Gayle Weinstein
 Botanist-Horticulturist

Thought for the End of the Year

"The seasons as they pass away are climates which travel round the globe, and come to seek me."

. Karr

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Calendar of Events



December 1980

- 2)* 1:00 p.m. Botanic Gardens House — Dining Room
- 2) 7:30 p.m. Education Building — Classroom B
- 3)* 4:00 p.m. Botanic Gardens House — Dining Room
- 4)* 2:00 p.m. Botanic Gardens House — Dining Room
- 4)* 3:00 p.m. Education Building — Classroom B
- 4)* 7:45 p.m. Education Building — Mitchell Hall
- 5)* 11:00 a.m. Botanic Gardens House — Main Room
- 6) 9:30 a.m. Education Building — Classroom B
- 7)* 12:30 p.m. Botanic Gardens House — Main Room

- 9)* 12:00 Noon Education Building — Herbarium
- 9)* 1:00 p.m. Botanic Gardens House — Dining Room
- 9)* 4:00 p.m. Botanic Gardens House — Dining Room
- 9) 7:30 p.m. Education Building — Classroom A
- 10)* 12:00 Noon Education Building — Classroom B
- 11)* 12:00 Noon Botanic Gardens House — Dining Room
- 11)* 7:00 p.m. Botanic Gardens House — Main Room
- 13)* 9:00 a.m. Education Building — Classroom B

- 13) 1:30 p.m. Education Building — Classroom C
- 14)* 4:45 p.m. Education Building — Mitchell Hall

- 16)* 12:00 Noon Botanic Gardens House — Main Room
- 16)* 7:30 p.m. Education Building — Classroom B
- 18)* 4:00 p.m. Botanic Gardens House — Dining Room
- 18) 7:30 p.m. Education Building — Classroom B

- 23)* 12:00 Noon Education Building — Herbarium
- 25) All Day

JANUARY 1981

- 1) All Day
- 3) 9:30 a.m. Education Building — Classroom B
- 6)* 1:00 p.m. Botanic Gardens House — Dining Room
- 7)* 1:00 p.m. Botanic Gardens House — Main Room
- 7)* 4:00 p.m. Botanic Gardens House — Dining Room
- 8)* 9:00 a.m. Education Building — Classroom C
- 8)* 9:30 a.m. Education Building — Classroom B
(This class continues on Thursdays through February 26)
- 8)* 9:30 a.m. Botanic Gardens House — Main Room
- 8)* 7:30 p.m. Education Building — Classroom C
(This class continues on Thursdays through February 19)
- 10)* 9:00 a.m. Education Building — Classroom B
- 10) 1:30 p.m. Education Building — Classroom C

- Editorial Committee Meeting
- Denver Bonsai Club
- Planning Committee Meeting
- Ikebana International Christmas Tea
- Education Committee Meeting
- Denver Orchid Society
- Civic Garden Club
- Gloxinia Gesneriad Growers
- Denver Bonsai Club Christmas Party

- Herbarium Committee Meeting
- Colorado Women's Conservation Club
- Executive Committee Meeting
- Colorado Cactus & Succulent Society
- P. R. & Development Committee Meeting
- Around the Seasons Christmas Luncheon
- Denver Men's Garden Club
- "Mini Course in Indoor Light Gardening"
— by Members of the Society
- Film: "Structure of the Garden"
- D.B.G. Membership Christmas Event

- Colorado Association of Home Economists
- Denver Bonsai Club
- Chatfield Committee Meeting
- Indoor Light Gardening Society

- Herbarium Committee Meeting
- "MERRY CHRISTMAS" (Gardens closed)

- "HAPPY NEW YEAR" (Gardens closed)
- Gloxinia Gesneriad Growers

- Editorial Committee Meeting
- Membership Committee Meeting
- Planning Committee Meeting
- Gardeners Training Class
- "Biological Illustration" — Angela Overy

- Central District Presidents Council
- "Landscape Horticulture for Professionals"
— Mr. Rollinger, Mr. Watson

- "Mini Course in Indoor Light Gardening"
— by Members of the Society
- Slides of Bermuda

**Members or enrollees only.*

Tributes

In memory of Harriet K. Clumpus for Japanese Garden

Clifford A. Chittim
Frank and Madeline Clark
Misses Evelyn and Vera Crocco
Duane and Pamela Duffy
Mr. & Mrs. Joseph Fullmer
William and Thelma Galac
Johns-Manville Camera Club
Johns-Manville Sales Corporation
(Construction and Corporate Engineering)
Arthur J. Jarvis
Andrew and Maureen Jelliffe
Mr. & Mrs. Lloyd Jenssen
Mr. & Mrs. Richard Johanson
Robert and Marion Lambert
R. B. McKenzie
Joseph R. Nagy
Leo Radkowski
Jerry and Deborah Shinaut
William and Rebecca Wooten

In memory of Mr. R. P. Ellingson, Sr.

Mr. & Mrs. John F. Falkenberg

In Memory of Mrs. Robert L. Falkenberg, Sr.

Mr. & Mrs. John F. Falkenberg and family

In memory of David Foster

Mrs. Esther McDowell

In memory of Mary Knoop

Claire R. Waldner

In memory of Joseph G. Shriver:

Beatrice and Clarion Croy
Clayton Croy
The Merle M. Moore family
Ruth and Duane M. Moore
Helen and Ervin Noyce
Lilas & Richard Oberson and Sonya

In memory of Wes Woodward, books for the Library
Mr. & Mrs. Richard Millard

Donations have been received from the following friends:

Mr. T. Aigaki
Mrs. Bruce McCannon
Pruett Publishing Co. of Boulder, copies of *Perennials
for Western Gardens*
Silers Printing, copies of the *Jolly Green Gardener* for
visiting children

Reminder

The Helen Fowler Library will be closed for inventory
starting December 15.

Classes

Don't forget the *Indoor Light Gardening* class on
*How to Grow House Plants Successfully Under Artificial
Lights* on December 13 from 9-12 noon, Classroom B. This
class will deal with cultural methods and techniques like
potting, watering, fertilizing, lighting and control of
insects and diseases. The cost of the single class is \$10.00
for members or \$12.50 for someone who is not a member.

Members should have received the *Winter List of
Classes* and it is hoped that everyone will find something
of interest in it. Don't delay in signing up because many
of the classes are limited in size.

Free Film

"The Structure of a Garden," a film from the
California Redwood Association, will conclude our free
film series for 1980. This is to be shown on December 13,
at 1:30 p.m., Classroom C. All welcome.

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